

2015

# Food allergy accommodation policies in colleges and universities: an investigation using organizational culture as a theoretical framework

Kelly Nicole Abdelmassih  
*Iowa State University*

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**Food allergy accommodation policies in colleges and universities: An investigation  
using organizational culture as a theoretical framework**

by

**Kelly Nicole Abdelmassih**

A dissertation submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Hospitality Management

Program of Study Committee:  
Susan W. Arendt, Co-Major Professor  
Lakshman Rajagopal, Co-Major Professor  
Ruth Litchfield  
Derrick Rollins  
Catherine Strohbehn

Iowa State University

Ames, Iowa

2015

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## DEDICATION

I dedicate this dissertation to my husband, Matt, and my parents, Julie and Clyde. They encouraged me to begin this journey and have supported me every step of the way. I share this accomplishment with them.

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**ABSTRACT**

A sequential explanatory mixed methods design (questionnaire and interview) was used to examine current food allergy accommodation practices, policies and procedures in colleges and universities. Also, organizational culture of college and university foodservice operations using the Competing Values Framework was investigated. A web-administered questionnaire was developed based on previous literature, and distributed to a national sample of foodservice professionals who were current members of the National Association for College and University Food Services. Seventy-six questionnaires (22.2% response) were used for analysis. Questionnaire results were analyzed using descriptive statistics, ANOVA, pooled sample t-tests and population proportion tests. Interview guides were developed based on questionnaire data and interviews (n=11) were conducted with a subsample of the questionnaire participants. Fifty-five (74%) questionnaire participants reported food allergy accommodation policies were in place at the departmental level and 25 (34%) reported policies at the institutional level. Departmental level policies were more prevalent at public institutions in comparison to private institutions; and more prevalent among contract-managed foodservice operations in comparison to self-operated. Interview data revealed considerable variation in approaches to food allergy accommodations irrespective of policy presence. Clan culture, characterized by a nurturing, environment emphasizing personal relationships, was the most prominent culture among represented foodservice operations. Due to low statistical power, significant differences in food allergy accommodation policies and practices were not detected based on organizational

culture type, however interview data suggested organizational culture may impact accommodation efforts.

## ACKNOWLEDGEMENTS

I would like to thank my committee co-chairs, Susan W. Arendt and Lakshman Rajagopal. They have led me through this process, providing guidance, assistance, and support – above and beyond – to help me successfully complete my degree program. Thanks to my committee members, Derrick Rollins, Ruth Litchfield, and Catherine Strohbehn, for their guidance and support throughout the course of this research. In addition, I would also like to thank my friends, colleagues, department faculty and staff for making my time at Iowa State University a wonderful experience. Thank you James Williams, Nathan Stokes, and Mary Snyder for your friendship, encouragement, and support. I want to also offer my appreciation to those who were willing to participate in my surveys and interviews, without whom, this work would not have been possible. Thank you to the College of Human Sciences, the Department of Apparel, Events, and Hospitality Management, and the Foodservice Systems Management Education Council for the grants, stipends, and scholarships that supported my work.

On a personal level, thanks to my family for their encouragement and support. Each and every one of them have helped me complete my degree program, including my dissertation. Specifically, my husband, Matt, has constantly supported my goals including the completion of this research and the writing of this dissertation. I sincerely thank him for his patience, encouragement, and love – and formally apologize to him for making him share the bed with my laptop computer, and a random stack of papers on any given evening over the last few years. Thank you to my Mom and Dad who answered every time I called overwhelmed with the process. They were always ready with sound advice or a gentle push in the right direction to keep me moving forward. Thank you, Pauli and Max for reading, editing, and formatting countless papers and presentations for me – including this dissertation. Thank you Eli, Molly,

and Tara for your support and for always being available when I needed a reprieve from my work. I could not have married into a better family as the Abdelmassih/Acampora/Connelly family have become an integral part of my support system and for their encouragement, I am forever grateful. And lastly, thank you to my favorite four-legged creature, Major... just because he's my boy.

## **CHAPTER 1: INTRODUCTION**

### **Introduction**

Food allergies are a potentially life-threatening health concern that affect about 15 million Americans (Food Allergy Research and Education [FARE], 2014). Treatment of food allergies requires constant avoidance of food allergens to minimize the risk of adverse reactions (FARE, 2014; Sicherer, 2011). Ingestion of food allergens by affected individuals can cause symptoms involving various systems including respiratory tract, skin and mucous membranes, digestive tract and nervous system (Joneja, 2013); ingestion of food allergens can even cause death by anaphylaxis (Bock, Munoz-Furlong, & Sampson, 2001; Sampson, Mendelson, & Rosen, 1992). Aside from the impact on overall health, food allergies can also impact individuals' psychosocial well-being – particularly when eating away from home (Cummings, Knibb, King, & Lucas, 2010; Goossens et. al, 2011). Failure to safely accommodate patrons with food allergies by providing safe foods away from home is well documented (Knoblauch, 2009; Kwon & Lee, 2012; Leitch, Walker, & Davey, 2005). Barriers to the provision of safe food for individuals with food allergies are: lack of food handler knowledge due to ineffective training, lack of awareness due to limited exposure to food allergy, lack of concern, lack of resources, and lack of time to provide accommodations (Kwon & Lee, 2012).

Due to the rising prevalence of food allergies among children and adolescents (Branum & Lukacs, 2008, 2009) and the potential impact food allergies have on overall health and well-being (Cummings et al., 2010), considerable attention has been paid to food allergy accommodation in the primary and secondary school (K-12) environment as evidenced by the release of food allergy management guidelines on the state level (Illinois State Board of Education & Illinois Department of Public Health, 2010; Molaison & Nettles, 2010; New Jersey

Department of Education, 2008; New York State Department of Health, New York State Education Department, & New York Statewide School Health Services Center, 2008; School Nutrition Association, 2014; Sheetz et al., 2004). Although some children and adolescents' food allergies may be outgrown, the health concern persists into adulthood for others (National Institute of Allergy and Infectious Diseases, 2011).

The need for food allergy accommodation policies is apparent in the K-12 environment as evidenced by the long standing USDA dietary accommodation guidance provided to school foodservice professionals (USDA Food and Nutrition Service, 2001) and the recent release of federal voluntary guidelines (Centers for Disease Control and Prevention, 2013); no similar federally released guidelines are available for colleges and universities (CUs). Dealing with food allergies in CU foodservice setting is challenging and there are potential liability issues attached to an allergic reaction caused by food provided on CU campuses (Elan, 2006). A recent legal case where students with celiac disease were not being accommodated heightened the awareness of potential legal action against CUs not providing reasonable accommodations to students with special dietary needs (Grasgreen, 2013). Though celiac disease is an auto-immune disease, unlike food allergies, these same legal ramifications are of concern to CUs in making accommodations for students with food allergies. Additionally, the documented risk taking behavior of young adults with food allergies (Sampson, Munoz-Furlong, & Sicherer, 2006) pose an additional challenge to CU officials. Despite the many challenges of food allergy management, it is the responsibility of CU leaders to provide reasonable accommodations to students who communicate they have food allergies.

The development of an operational plan and policies are considered best practice for food allergy accommodation in foodservice operations but research has shown a lack of published

accommodation policies in the CU environment (Rajagopal & Strohbehn, 2011). In order to assess presence and thoroughness of current food allergy accommodation policies, the underlying organizational perspectives that drive development and implementation of policies must be understood. This study used organizational culture as a theoretical framework to examine food allergy accommodation policies and practices in CUs.

### **Significance of Study**

Limited research regarding food allergy accommodation practices in CUs exist. Known studies have examined food allergy management from various perspectives. For example, Choi and Rajagopal (2013) investigated CU foodservice workers' food allergy related knowledge, attitudes, and practices including employee training; Greenhawt, Singer, and Baptist (2009) examined college students' food allergy related attitudes and reported food allergy accommodation practices in CUs (e.g. menu alternatives); and Rajagopal and Strohbehn (2011) examined CU foodservice directors' perceptions and attitudes toward food allergy accommodation practices and policies. In an additional study, college and university foodservice directors (n = 95) reported no published food allergy policies both at the institutional level (n = 72) and foodservice department level (n=52) (Rajagopal & Strohbehn, 2011).

This study builds upon previous research by examining food allergy accommodation management in CUs including components of published policies, differences and similarities between policy implementation across various CUs, and potential impact of the organizational culture on food allergy accommodation management. It was expected there would be a high proportion of CUs with established policies and practices because: 1) food allergy awareness initiatives have generated greater exposure for the general population; 2) recent litigation has heightened attention to food allergy accommodation requirements in CUs in accordance with the

Americans with Disabilities Act (ADA); and, 3) previous research (Rajagopal & Strohbehn, 2011) found many CUs without published policies were in the process of formalizing policies.

This research used a novel approach to examine food allergy accommodation efforts in foodservice operations. Previous studies have taken either more qualitative approach, involving textual artifacts (French, 2013), and interviews (Abbott, Byrd-Bredbenner, & Grasso, 2007); or a more quantitative approach using survey methods (Borchgrevink, Elsworth, Taylor, & Christensen 2009; Choi & Rajagopal, 2013; Greenhawt, Singer, & Baptist, 2009; Mandabach, Ellsworth, Vanleeuwen, Blanch, & Waters, 2005; Wham & Sharma, 2014). This research integrated both more quantitative (i.e. questionnaire) and qualitative (i.e. interviews) aspects, in a sequential design. This approach allowed the lead researcher to investigate the current state of food allergy accommodations in CUs and then follow up with participants thereby yielding more descriptive, specific, and robust conclusions.

### **Objectives of the Study**

The purpose of this research was to investigate organizational cultures that may influence food allergy accommodation behaviors and policies in CUs. The specific research objectives for the study were:

1. Analyze formal (published) policies and procedures for food allergy accommodation in CU foodservice operations.
2. Determine whether variation in food allergy accommodation practices exist between different types of CU foodservice operations.
3. Evaluate food allergy accommodation practices in CU foodservice operations.
4. Identify prominent organizational culture types among CU foodservice operations.
5. Explore CU foodservice directors' conceptualization of culture within the operation.



6. Examine impact of the culture of CU foodservice operations on food allergy accommodation practices.

### **Hypotheses**

Based on previous literature, an expanded definition of disability under the ADA, and a notable lawsuit against a CU due to insufficient accommodations for a documented disability, the following results were hypothesized:

H<sub>1</sub>: Public CUs will have greater likelihood of formalized food allergy accommodation policies in comparison to private CUs.

H<sub>2</sub>: Contract managed operations will have greater presence of formalized food allergy accommodation policies at the departmental level than self-operated.

H<sub>3</sub>: Private CUs will follow a greater number of food allergy accommodation practices in comparison to public CUs.

H<sub>4</sub>: Clan culture will be the predominant organizational culture type in CU foodservice departments.

H<sub>5</sub>: Food allergy accommodation practices will differ based on culture type of the CU foodservice operations.

H<sub>6</sub>: Comprehensiveness of food allergy accommodation policies will differ based on the culture type of the CU foodservice operations.

### Definition of Terms

**Food allergy:** a condition that causes an adverse immune-mediated response (Joneja, 2013) that occurs reproducibly upon exposure to proteins in food (Boyce et al., 2010a)

**Food allergen:** a food which stimulates an immune system response (Joneja, 2013)

**Food allergic reaction:** immune-mediated symptoms (e.g. facial swelling and edema, vomiting, wheezing, hives, rash) arising from ingestion of a food allergen

**Anaphylaxis:** a serious adverse allergic reaction characterized by rapid onset which may result in death (Boyce et al., 2010b, p.21); symptoms of anaphylaxis include difficulty breathing, reduced blood pressure, skin symptoms, swollen lips, gastrointestinal symptoms such as vomiting, diarrhea or cramping (FARE, 2014).

**Cross-contact:** an accidental introduction of allergens into non-allergen food occurring when 1) foods are prepared near one another, 2) cooking utensils and equipment are not properly cleaned between from one product to another (Kwon & Lee, 2012).

**Food allergy accommodation:** adjustment of foodservice offerings (e.g. menu items, facility amenities) to safely serve patrons with food allergies

**Organizational culture:** shared beliefs and values which govern how things are done within an organization (Trefrey, 2006)

**CU foodservice professional:** a foodservice or nutrition professional responsible for coordinating, administrating, or training aspects of the food allergy accommodations efforts at CUs

**Procedure:** an established way of doing something (Meriam Webster, 2002) such as accommodating students with food allergies

**Policy:** a planned course of action, written and published in an organization's governance documents, used to guide present and future decisions

**Lesley University settlement:** an official agreement between the Department of Justice and Lesley University resolving student complaints of the university's non-compliance with the Americans with Disabilities Act of 1990 (U.S. Department of Justice, 2013)

**Americans with Disabilities Act of 1990:** a law which prohibits discrimination against individuals with an impairment that limits one or more major life activities; and requires reasonable accommodations be provided to ensure individuals with impairments have same access to public and commercial facilities as individuals without impairments (Title III Regulations Supplementary Information, 2010)

### **Dissertation Organization**

This dissertation contains six chapters. Chapter One is the introduction to the proposal which also includes study objectives, hypotheses, and definition of terms. Chapter Two is a review of literature and Chapter Three outlines the methodology used for the study. Chapter Four is a manuscript to be submitted to the *Journal of Foodservice Management and Education*. Chapter Five is a manuscript to be submitted to the *International Journal of Contemporary Hospitality Management*. I was responsible for development of research concept, data analysis, data collection and manuscript writing; and Dr. Arendt and Dr. Rajagopal were involved in all phases of research. Chapter Six is an overall summary and general conclusions of the study.

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## **CHAPTER 2: REVIEW OF LITERATURE**

### **Overview of Food Allergy**

The National Institute of Allergy and Infectious Disease (NIAID) sponsored expert panel report (Boyce et al., 2010a, p. S8) defined food allergy as “an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food.” Food allergies are a serious condition which may cause a potentially life-threatening immunological reaction to ingesting specific food items (Branum & Lukacs, 2008). Such a life-threatening reaction is termed anaphylaxis; anaphylaxis is defined as “a serious allergic reaction that is rapid in onset and may cause death (Boyce et al., 2010b, p.21).

It should be noted food intolerance is a condition distinct from food allergy. A study conducted to assess American adults’ knowledge, beliefs, and attitudes toward food allergies found about half (49.6%) incorrectly believed milk allergy was the same as milk intolerance (Gupta et al., 2009). The distinguishing feature between the two terms is the involvement of an immune system response. A food intolerance is “the result of non-immunological mechanisms” which typically involve a defect in the digestion of the offending food (Joneja, 2013). Due to the seriousness of food allergic reaction consequences, this research is focused on food allergies as opposed to intolerances.

Heightened attention has been given to the examination of food allergy trends among child and adolescent populations, specifically. Food allergy rates in the American child and adolescent population appears to have increased over time (Branum & Lukacs, 2008); the rate of reported food allergies among all U.S. children, regardless of age, gender and race/ethnicity, increased significantly from 1997 to 2007 (Branum & Lukacs, 2009). The increase in food allergy prevalence may be attributed to several factors including: increased awareness, increased



reporting, different use of diagnostic codes in medical practice, as well as actual increased prevalence. Experts acknowledge some children with food allergies are able to tolerate, or outgrow, their food allergies. However, for others the condition remains after childhood and adolescence (Boyce et al., 2010a).

Experts denote actual prevalence figures are difficult to determine because most prevalence studies examine the most common allergens only; subjects tend to over-report food allergies; and comparison of food allergy incidence and prevalence studies are difficult to conduct due to weak study design and varying definitions of food allergy (Boyce et al., 2010a). Food allergies are thought to affect up to 15 million Americans (Food Allergy Research and Education [FARE], 2013). Studies employing objective measures of food allergies yielded more conservative estimates than self-reported food allergies (Rona et al., 2007). For example, Vierk, Koehler, Fein and Street (2007) found food allergy prevalence estimates differed according to extrapolation method used – estimates from self-reported food allergies versus estimates from self-reported doctor-diagnosed food allergies (9.1% and 5.3% of the continental U.S. population, respectively).

Though there is uncertainty in the exact prevalence of food allergy (Boyce et al, 2010a; Rona et. al, 2007; Schirer, 2011), it is an increasingly common health concern that can significantly impact the lives of affected individuals. Food allergies have been shown to negatively impact an individual's quality of life (Goossens et al., 2011). Avoidance of offending allergens is the primary strategy for food allergy management, and this constant avoidance of food has been shown to cause psychosocial distress in food allergic individuals and their families (Cummings, Knibb, King, & Lucas, 2010; Goossens et al, 2011; Peniamina, Bremer, Conner, & Miroso, 2014).

In addition to the psychosocial impact food allergies may have on individuals, food allergies can significantly impact individuals' overall health. Hospitalizations due to food allergic reactions appear to be increasing. Branum & Lukacs (2009) found that from 2003-2006, approximately 317,000 visits to ambulatory care facilities per year had food allergy-related diagnoses which is nearly three times as many compared to 1993-1997 time period. Branum & Lukacs (2009) acknowledged the increase of hospitalizations and ambulatory care visits may be due, in part, to increased awareness for food allergy medical diagnostic codes.

Bock, Murnoz-Furlong, and Sampson (2001) analyzed 32 cases of fatality due to food allergy-related anaphylaxis which occurred between 1994 and 1999. Peanut (n=20; 63%), nuts (n=10; 31%), and other foods including milk and fish (n=2; 6%) caused fatal anaphylactic reactions. Before the fatal reactions occurred, none of the subjects were aware they were about to ingest a food to which they were allergic. Furthermore, the family of a 2 year old subject had no known history of food allergies or asthma. The most (n = 7; 21.9%) reactions occurred in the college environment while 6 (18.8%) occurred in a restaurant; 3 (9.4%) reactions occurred at a friend's home, 5 (15.6%) at home, 3 (9.4%) at school, and 8 (25%) in other miscellaneous places.

A recent meta-analysis study examined the incidence of fatal food anaphylaxis among individuals with food allergies (Umasunthar et al., 2013). This systematic review identified 13 articles describing 240 deaths from food allergy-induced anaphylaxis. From 10 of these studies, the estimated incidence rate of fatal food allergy-induced anaphylaxis for a food allergic person was 1.81 per million person-years (product of the number of years diagnosed multiplied by the number of people affected). The estimated incidence rate of fatal food allergy-induced anaphylaxis for individuals aged 0 to 19 as compared to individuals with peanut allergy was 3.25

per million person-years compared to 2.13 per million person-years, respectively. These results suggest fatal food allergy-related anaphylaxis is a rare event (Umasanthar et al., 2013); however, given the fact fatalities due to food allergic reactions are preventable, food allergies should be addressed so future fatality rates trend toward zero.

Controlling the food environment of individuals with food allergies is imperative to the prevention of food allergic reactions. A USDA study reported about half of U.S. food expenditures are spent on food prepared away from home (Stewart, Blisard, & Jolliffe, 2006). Because such a substantial proportion of food expenditures are spent away from home, ensuring delivery of safe food for individuals with food allergies is imperative in commercial and non-commercial foodservice operations.

### **Food Allergies and Foodservice Operations**

Recent data have shown American expenditures on food away from home have increased since 1970, with a record high of 43.1% total household expenditures on food away from home in 2012 (Economic Research Service [ERS], 2012). A survey conducted by a business consulting firm, AlixPartners, revealed consumers planned to eat away from home less often in the year 2014 (Jennings, 2013). Consumers' desire to eat healthier was a frequently reported reason for reducing dining out frequency followed by the need to reduce food expenditures. The National Restaurant Association projected 47% U.S. food dollars would be spent in restaurants in the year 2015 (National Restaurant Association, 2015).

The away from home food environment is a source of stress for individuals with food allergies (Goossens et al., 2011). Goossens et al. (2011) studied the Health-Related Quality of Life (HRQL) of Americans and Dutch with food allergies. American participants rated their HRQL higher than the Dutch participants (5.3 and 4.5, respectively on a 7 point scale where 1 =

no impairment and 7 = extreme impairment in HRQL) indicating food allergies were perceived to have a greater impact on quality of life for Americans. Several questionnaire items differed between American and Dutch participants, many of which pertained to the away from home food environment. American and Dutch participants rated their food allergies troublesome for these reasons: “less able to taste or try various products when eating out” (5.7 vs. 4.2); and “can eat out less” (4.9 vs. 4.1). Both American and Dutch participants indicated they were frightened of an allergic reaction when eating away from home even though dietary restrictions had been addressed (5.4 and 4.0, respectively) (Goossens et al., 2011).

Hazel Gowland (Gowland, 2001), an advocate for herself and others living with food allergies, refers to the quest for food allergen avoidance in the lives of those affected by the condition:

In a world full of interesting and labor-saving food choices, allergy sufferers are a significant minority, growing in number, who take their lives in their hands every time they eat. Sandwich bars, local bakeries, take-aways and ready meals are key food supply sources for people with more disposable income and busy working lives but they can represent a very real risk to allergy sufferers who would like to be able to enjoy everyday foods, parties and luxuries without worrying. Eventually, they would like to feel free to eat out, knowing that restaurant staff will be able to handle their requests with confidence and competence. (p. 120)

### **Food allergy legislation affecting foodservice operations**

Recognizing the prevalence of food allergies in the U.S. and the potential impact of the condition, legal authorities have begun recognizing the importance of maintaining a safe food environment. In recent years, several U.S. government health-based initiatives and regulations have food allergy objectives included. For example *Healthy People 2020*, a science-based agenda to improve the health of the U.S. population, outlines an objective to reduce severe food

allergic reactions among U.S. adults who have food allergies, to less than 21% by the year 2020 (U.S. Department of Health and Human Services [DHHS], Office for Disease Prevention and Health Promotion [DPHP], 2013). According to data from the Food and Drug Administration (FDA) Food Safety Survey (FSS), the percentage of U.S. adults reporting severe food allergic reactions has fluctuated from 26.5% in 2001 to 29.3% in 2006, and 21.8% in 2010 (DHHS, DPHP, 2013).

Because treatment of food allergies requires diligent avoidance of the offending food allergen (Sicherer, 2011), individuals with food allergies rely on accurate ingredient information when purchasing foods. Goossens et al. (2011) found individuals with food allergies reported it troubling that food labels were incomplete. However, a law was passed to specifically address this issue. The Food Allergy Labeling and Consumer Act of 2004 (FALCPA) required plain language labelling of the eight most common food allergens (milk, egg, fish, shellfish, tree nuts, peanuts, soybean, and wheat, also known as the Top 8); the law applies to all foods regulated by the FDA including food prepackaged for sale by retail foodservice operations and food manufacturers (DHHS, FDA, 2006). The proposition and subsequent passing of this law were supported by empirical evidence that foods containing any one of the Top 8 allergens were not clearly identified and individuals with food allergies had difficulty identifying derivatives of food allergens in food items (FALCPA, 2004).

Revisions to the Food Code addressing food allergies and allergens first appeared in the 2005 version (U.S. Food and Drug Administration [FDA], 2005). The term “major allergens” was added, labelling requirements as specified by the Food Allergen Labeling and Consumer Protection Act were added, and requirements for food allergies as a knowledge area for the “Person in Charge” were added. Beginning with the 2009 version, the Food Code outlines the

responsibility of the “Person in Charge” to ensure foodservice employees undergo food safety training as it relates to their assigned duties, including food allergy awareness (FDA, 2009). States adopting the most recent Food Codes (i.e. 2009 and 2013) require foodservice operations to provide food allergy training to their personnel and implement procedures to reduce the risk of customers having food allergic reactions.

### **Challenges to providing food allergy accommodations**

Foodservice operations’ shortcomings of providing safe away from home food for individuals with food allergies are well documented in the literature (Kwon & Lee, 2012; Knoblaugh, 2009; Leitch, Walker, & Davey, 2005). Leitch, Walker and Davey (2005) assessed ethnic restaurant staff’s ability to provide peanut-free meals upon request. Twenty-six Environmental Health Officers (EHO) in Ireland collected meal samples from three separate establishments which provided take-away ethnic meals. A pair of meals was obtained from each of 62 establishments: the EHO requested one meal that was likely to contain peanuts and a second meal that was peanut-free for a consumer with a peanut allergy. Upon analysis, 13 (21%) of the 62 cases in which meals were requested to be free of peanuts were positive for peanut protein. In seven (11.3%) of these cases, a restaurant worker reassured the EHO of the safety of the food. The restaurant worker receiving the peanut-free meal request consulted with co-workers of the establishment in only 12 cases; the chef was consulted in eight (12.9%) cases while the restaurant worker relied on his/her own knowledge of meal ingredients in four (6.5%) cases. These researchers (Leitch et al., 2005) suggested food allergic consumers should avoid ethnic restaurants due to uncertainty of risk.

Kwon and Lee (2012) employed an exploratory research design using focus groups to examine the attitudes and behaviors of American consumers (n=17) with food allergies toward

dining out. Participants expressed an array of emotions about dining out including feeling bothersome to restaurant staff when making special requests; feeling frustrated with restaurant staff who did not understand food allergy accommodation requests; and feeling fearful due to previous experiences with food allergic reactions. However, some felt comfortable requesting accommodations. About half (47%) of the participants reported having food allergic reactions after dining at a restaurant. Participants attributed reasons for eating known food allergens including: intentional ingestion of allergen related to peer pressure; intentional ingestion to “build up a tolerance”; food allergen handling practices of food service staff (Kwon & Lee, 2012). Potential causes for food allergic reactions include non-obvious ingredients in dishes, miscommunication among restaurant staff, incomplete food labeling, and cross contact.

Bailey, Albardiaz, Frew, and Smith (2011) conducted a study in Great Britain examining restaurant staff’s knowledge about food allergies. Though 90% (n=81) restaurant employees (including managers and line level staff) had received formal food safety training, only 33% (n=30) had received food allergy-specific training. The study revealed gaps in restaurant employees’ knowledge about food allergies. For example, only 56% (n=50) respondents correctly named three common food allergens. About a quarter of respondents believed drinking water during a food allergic reaction would dilute the allergen; and about a quarter (23%) of employees believed consuming trace amounts of allergens is safe. Despite many incorrect responses to knowledge items, almost all employees (85 of 90) were confident in their ability to serve safe food to food allergic patrons (Bailey et al., 2010). This study illustrates the need for food allergy-specific training and changed food allergy accommodation behaviors among restaurant employees.

Abbott, Byrd-Bredbenner and Grasso (2007) recruited the assistance of an advisory panel comprised of 25 health professionals, foodservice experts, allergy education experts and food-policy experts to develop a food allergy fact sheet in response to the passage of a New Jersey state law requiring development of educational resources for effective food allergy accommodation management. Interviews and focus groups were employed to examine food allergy challenges for foodservice operations; data were then considered in development of the fact sheet. Researchers revealed a lack of formal food allergy policy for handling food allergy accommodation requests. While 42% foodservice managers, owners and chefs reported serving customers with food allergies, only 27% reported having a policy outlining accommodation procedures, most of whom worked in school foodservice operations (Abbott et al., 2007). Based on the qualitative data analysis and opinions of the expert panel, three primary messages were conveyed in the fact sheet: (1) the seriousness of food allergies, (2) food-handling instructions on how to prevent food allergic reactions; (3) instructions for ensuring food ingredients and preparation are safe for consumers with food allergies.

Kwon & Lee (2012) found consumers with food allergies recognize cross-contact as a source of contamination of food with allergens. Cross contact is the “unintentional introduction of food allergens into another food item” which may occur when foods are in close proximity of one another, cooking equipment and utensils are not properly cleaned between products, or food handlers transfer contaminants from their hands (Kwon & Lee, 2012, p. 741). Further, individuals with food allergies perceive restaurants face several barriers in the quest to provide allergen-free foods including: lack of knowledge as a result of scarce training; lack of awareness about food allergies related to limited personal exposure; lack of concern among food handlers; lack of resources; and lack of time in a fast-paced work environment (Kwon & Lee, 2012).



Research has shown (Abbott, et al., 2007) foodservice personnel (n=34) acknowledge the importance of having knowledge about food allergies as evidenced by average ratings of 4.8 for managers, 4.6 for service staff, and 4.7 for kitchen staff (using a 5 point Likert-type scale, ranging 1 = not important at all to 5 = extremely important). Despite the perceived importance of knowing about food allergies the study found many barriers to developing training programs (e.g. training costs, high employee turnover, limited time, language barriers, and lack of interest) (Abbott et al., 2007).

Knoblauch (2009) studied perceptions of customers with food allergies, including parents of children who have food allergies, and exposure to undeclared or hidden wheat. Undeclared and hidden allergens were defined as “allergens that have been incorporated into a food product without intent” (Knoblauch, 2009, p. 123) and “known allergens being mistakenly omitted” from labeling (Knoblauch, 2009, p. 123), respectively. Respondents (n = 85) reported speaking to the server (81.9%), the cook (33.7%) and/or the manager (19.3%) to determine menu items containing wheat. It was found that those who spoke only to the server when attempting to make menu selections had a 28.8% exposure rate to hidden/undeclared wheat whereas respondents who spoke with the server in addition to a cook had a 17% exposure rate. In the same study, Knoblauch (2009) found 14.4% of the participants who ordered meals advertised by the restaurant as gluten-free reported having an adverse reaction to hidden/undeclared wheat. Several respondents (22%) who reported adverse reactions to hidden wheat sources suspected cross contact as the cause.

Findings indicated customers relied on foodservice staff to verify that food was safe and free of hidden/undeclared wheat and assumed staff were able to provide customers with accurate information about ingredients for all items served. This study provides evidence that all

foodservice staff should be involved in the communication of allergen information thereby emphasizing the importance of staff education – for servers, cooks, and management (Knoblauch, 2009).

### **Food Allergy Accommodation in Schools**

As demonstrated, food allergy accommodation practices in commercial operations (e.g. restaurants) are well documented in the literature. Additional research has been devoted to food allergy accommodation practices in school foodservice operations, and other types of non-commercial foodservice operations. The following section will include discussion of the following: food allergy prevalence among school-aged children; food allergy management in schools; and food allergy management in colleges and universities.

#### **Prevalence of food allergies among children and adolescents**

Numbers of children and adolescents with a food allergy appears to be rising, prompting school officials to take efforts to ensure a safe food environment for those students. One study analyzed data from the 2007 National Health Interview Survey (NHIS) and the National Hospital Discharge Survey (NHDS) to identify trends (with data from 1997 to 2007), in food allergy prevalence and hospitalizations among American children. The reported food allergy rate among children (under 18 years of age) increased 18% from 1997 to 2007, with an estimated 3 million (3.9%) American children reported to have a food allergy in 2007 (Branum & Lukacs, 2008; Branum & Lukacs, 2009). Prevalence disparities among the following demographic groups were noted: Hispanic children had lower rates of reported food allergy than non-Hispanic children; younger children (under age 5) had higher reported food allergy rates than older children (age 5 to 17); and no significant differences in food allergy rates were found by gender. Increased food allergy rates may be attributed to several factors including: increased awareness, increased

reporting, different use of diagnostic codes in medical practice, and actual increased prevalence (Branum & Lukacs, 2008).

Branum & Lukacs (2009) found approximately 317,000 visits to ambulatory care facilities per year (2003-2006) resulted in food allergy-related diagnoses; this is nearly three times as many compared to 1993-1997 time period. Branum & Lukacs (2009) acknowledged increases of hospitalizations and ambulatory care visits may be due, in part, to increased awareness for food allergy medical diagnostic codes.

Due to the rising reported prevalence of food allergy among children in the U.S., heightened attention has been paid to controlling affected children's food environment, both at home and away from home. A systematic approach to food allergy accommodation among pre-school aged children has been underdeveloped, possibly due to diverse approaches to childcare for children under the age of 4 (e.g. formal childcare or small private childcare, high socio-economic groups or low socio-economic groups, "at risk" developmental populations) (Leo & Clark, 2012). However, the U.S. Department of Child and Adult Care Food Program (CACFP) reimburses meal substitutions for children with food allergies when appropriate medical documentation is provided (USDA, Food and Nutrition Service, 2014). Upon review of several CACFP administrative handbooks issued at the state level, it was found that the handbooks outline minimum requirements to ensure reimbursable meal substitutions for children with food allergies and other documented dietary needs (Illinois State Board of Education, 2014; Kansas State Department of Education, 2014; Kentucky Department of Education, 2014). However, specific guidance for the provision of allergen-free meal delivery to children is not given.

Communication between parents and caregivers is essential to the conveyance of food allergy accommodation needs. Enhanced food allergy training for childcare staff is

recommended; training topics should include: general food allergy knowledge, signs and symptoms of allergic reaction, food safety precautions in food preparation and service, and food allergy emergency response procedures (Leo & Clark, 2012).

Gupta et al. (2010) utilized web-based survey method to examine food allergy knowledge and perceptions of parents of food allergic children under the age of 18. Parents were relatively knowledgeable about food allergy as evidenced by participants' averaged 75.3% correct responses to knowledge items. About half of participants (50.1%) felt comfortable school/child care staff could manage food allergy emergencies. Most participants (91.3%) were in agreement trained staff should be present at all school related functions where food is served.

Handling of food allergy and allergens in K-12 schools has received considerable attention (Molaison & Nettles, 2010; Sheetz et al., 2004). Molaison and Nettles (2010) investigated prevalence of special nutrition accommodation needs (e.g. food allergy accommodation) in school nutrition programs, and the role of school nutrition program directors in the provision of accommodations.

### **Food allergy accommodation guidelines for school nutrition programs**

The School Health Policies and Practices Study (SHPPS) is conducted every six years by the Centers for Disease Control and Prevention (CDC) to examine school health policies and practices (U.S. Department of Health and Human Services [DHHS], CDC, 2013). Findings revealed 64% of the 50 states plus District of Columbia involved developed, revised, or assisted in developing model policies, policy guidance, or other materials addressing severe food allergies or other non-food allergies. Eighty-four percent of states reported distribution of model policies, policy guidance or other materials addressing severe food or other allergies.

Illustrative of SHPPS findings, several state departments and boards have issued guidelines for food allergy accommodation in school nutrition programs over the past decade. The Illinois State Board of Education and the Illinois Department of Public Health collaboratively released the *Guidelines for Managing Life Threatening Food Allergies in Illinois Schools* in 2010 (Illinois State Board of Education & Illinois Department of Public Health, 2010). New York State Department of Health, New York State Education Department and the New York Statewide School Health Services Center (2008) collaboratively released *Making the Difference: Caring for Students with Life-threatening Allergies*. The New Jersey Department of Education (2008) released a set of guidelines entitled the *Guidelines for Managing Life-threatening Food Allergies in Schools*. Similarly, guidelines for handling food allergies in Massachusetts schools were established by a collaboration of stakeholders to prevent accidental exposure to specific allergens in the school setting (Sheetz et al., 2004).

These state-issued guidelines have the shared purpose of guiding school officials' development of policies and procedures to ensure safe school environment for students with food allergies. Work to improve the safe food environment for students with allergies has been documented at the district level as well. Districts allocating funding for professional development opportunities related to food allergy management in schools increased from 48.4% (of 660) in 2006 to 63.5% (of 660) in 2012 (DHHS, CDC, 2013). At the time of the SHPPS, written procedures for feeding students with known severe food allergies was required in 60.2% districts and recommended for an additional 22.7% districts.

Though apparent attention to effective food allergy management in schools has heightened, prior to 2013, school nutrition professionals lacked formal federal guidance for accommodation of food allergy in schools. Guidance for accommodation in this sector had been

published among interest and advocacy groups; for example Food Allergy Research and Education (FARE; formerly the Food Allergy and Anaphylaxis Network) and the School Nutrition Association have published several resources to guide school professionals to promote safe food environments in schools for children with food allergy (FARE, 2014a; School Nutrition Association, 2014).

The National Institute of Allergy and Infectious Diseases sponsored an expert panel to conduct review of food allergy management and diagnoses practices which resulted in a set of guidelines (Boyce, J. A. et al., 2010b). Section 112 of the Food Safety Modernization Act (2011) called for the development of voluntary guidelines to manage food allergies in early childhood education facilities. Prompted by this mandate, the aforementioned National Institute of Allergy and Infectious Diseases guidelines and additional expert input informed the development of *Voluntary Guidelines for Managing Food Allergies in Schools and Early Care and Education Program*, released by the CDC (2013).

The *Voluntary Guidelines* (CDC, 2013) are comprehensive, providing practical information, considerations and recommendations for implementing strategies to reduce risk of food allergic reactions and to handle food allergic reactions in the school environment. The guidelines suggest maintenance of effective food allergy accommodation plans and emergency action preparedness be a collaborative effort between parents, school staff (including nurses, teachers, and foodservice workers), school administrators, and district administrators. The collaborative approach to policy making is especially important in the K-12 school environment where students, especially younger students, may not be equipped to make appropriate dietary decisions, recognize the signs and symptoms of a food allergic reaction, or know how to respond

in the event of a food allergic reaction. Therefore effective management of students' food allergies is the responsibility of the students' parents and the adults in the environment.

Similar to K-12 schools, collegiate foodservice operations contribute to the daily dietary intake of students in this setting, however the responsibility of food allergy management efforts shifts to the student.

### **Food Allergy Accommodation in Colleges and Universities**

College and university (CU) foodservice operations face unique challenges to handling food allergies due to the nature of their clientele. Students who live on campus in residence halls may not have access to a kitchen or may be required to purchase meal plans, therefore they must rely on university dining centers for a large proportion of their dietary needs. Foodservice venues in higher education settings vary, including traditional dining settings, catering, vending, snack kiosks, and convenience stores (Gregoire, 2012). Foodservice directors indicate accommodating students with food allergy in the college and university foodservice setting is challenging given the constantly changing demands of students and potential liability issues attached to an allergic reaction caused by food eaten on campus (Elan, 2006). Consumers are responsible for making their own decisions; research shows teenagers and young adults are most likely to take risks with their food allergies (Sampson, Munoz-Furlong & Sicherer, 2006). Though consumption decisions are made by the consumer, college and university foodservice operations must be able to accommodate special requests related to food allergies.

### **Legal implications of food allergies in colleges and universities**

In response to a complaint accusing Lesley University and the involved contracted foodservice management company of violating the Americans with Disabilities Act by failing to make reasonable accommodations for students with celiac disease and food allergies, the U.S.

Department of Justice entered an agreement with Lesley University ensuring students with food allergies have the opportunity to enjoy the advantages and benefits of the college dining experience (Schilling, 2015; U.S. Department of Justice, 2013). The settlement summarizes the conclusion that Lesley University staff violated the Americans with Disabilities Act of 1990. Food allergies may be considered a disability under this law and the institution discriminated against individuals with food allergies by not providing reasonable accommodations, as requested, enabling such students to enjoy the services, facilities, and advantages offered to all students. The complaint was resolved without litigation and resulted in a settlement outlining how compliance with the ADA would be ensured moving forward.

The settlement between the Department of Justice and Lesley University outlined steps the institution was required to make including establishing and implementing policies and procedures to accommodate students with food allergies (U.S. Department of Justice, 2013). Additionally, the institution agreed to pay \$50,000 to individuals whom the Department of Justice identified as receiving inadequate accommodations. This case set a legal precedent as it was the first time a higher education institution and the Department of Justice settled an alleged violation of the ADA pertaining to food allergy accommodation (HSE Legal Currents, 2013). The details of the settlement have practical implications for professionals of other CUs – both public and private institutions, as modifications which can be made to accommodate students with food allergies are outlined within the settlement (Celiac Community Foundation of Northern California, 2013; Grasgreen, 2013; HSE Legal Currents, 2013).

### **Resources available to colleges and universities**

As aforementioned, the *Voluntary Guidelines* (CDC, 2013) comprehensively addressed food allergy accommodation in the K-12 environment. No such equivalent has been federally



released to direct food allergy accommodation in CUs. FARE (formerly Food Allergy and Anaphylaxis Network), collaboratively with the National Association for College and University Food Services and the National Restaurant Association, released the *Food Allergy Training Guide for Colleges and Universities* in 2005. This resource is geared specifically toward the foodservice operation and contains information to aid development of food allergy accommodation management training programs for CU foodservice employees. Topics in this resource include: risk management, policy development, emergency action plans, and employee-specific considerations. Though useful to foodservice operations, the guide does not address other aspects of food allergy management for college students including training for non-foodservice employees and social aspects of effective food allergy management.

In January 2014, FARE introduced the College Food Allergy Program to comprehensively address food allergy management in colleges and universities. The objectives of the program are to: 1) develop best practices guidelines for identification and accommodation of students with food allergy in regards to housing, foodservice, disability services, and student health; 2) develop training program for foodservice employees; 3) develop training for non-foodservice employees; 4) develop a toolkit to help students with food allergy and their parents navigate the transition to college; and 5) create social advocacy groups on campus to help students with food allergy navigate the college environment. Components of the program will be piloted at 5-10 CUs starting fall 2014; an online database will be constructed to show which components of the program were tailored and implemented on each campus.

### **Risk taking behaviors of young adults**

A New Zealand study involving focus groups with food allergic individuals identified several issues related to living with food allergies (Peniamina, et al., 2014). Three themes

emerged from participant responses, including lack of availability of allergen-free products and difficulty eating out. Researchers believed the third theme, risk taking, was influenced by the other two. That is, participants discussed the difficulty in finding products and away from home foods safe to eat, thereby influencing their risk taking behaviors. The social isolation resulting from food avoidance was also cited as a reason for risk taking (Peniamina et al., 2014). Though risk taking is prevalent among food allergic people for a variety of reasons, one specific demographic group (i.e. adolescents/young adults) is particularly susceptible to risk taking.

Adolescence is an age period in which one's physical and mental capabilities expand beyond that of childhood in preparation for adulthood (Dahl, 2004). Despite adolescents' maturation and ability to make decisions based on cognition and understanding in comparison to abilities during childhood, this group is more susceptible to emotional and social influences in decision making (Dahl, 2004; Willoughby, Good, Adachi, Hamza, & Tavernier, 2013). Dahl (2004) reported overall morbidity and mortality rates increase 200% from early childhood to adolescence and early adulthood due to difficulty controlling impulses, behaviors and emotions resulting in high rates of accidents, suicide, depression, alcohol use, drug use, reckless behaviors, and health problems.

The tendency for risk taking behaviors among adolescents has implications in the realm of food allergy management. Adolescents and young adults are the most susceptible age demographic to food allergy induced anaphylaxis due to risk taking behaviors, failure to recognize symptoms of anaphylaxis, and failure to carry and/or administer self-injectable epinephrine in a timely manner (Bock et al., 2001; Sampson, Mendelson, & Rosen, 1992; Sampson et al., 2006). A review of 32 cases of fatality due to food allergy induced anaphylaxis revealed 21 (66%) were adolescents or young adults between the ages of 13 and 21 (Bock et al.,

2001). Upon further examination, most of these fatal reactions occurred in a restaurant or at a friend's home (n=18) while a smaller number occurred at home (n=5), at school (n=4) and in other places (n=5). An earlier study had reviewed all known cases (n = 13) of fatal or near fatal food allergy induced anaphylaxis over a 14-month period, and found of the victims, seven were adolescents (Sampson et al., 1992).

Sampson et al. (2006) employed an internet-based questionnaire to investigate risk taking and coping strategies of individuals with food allergies aged 13 to 21 (n = 174; mean age 16 years). Most participants (86%) perceived their food allergy to be life-threatening and 82% perceived their allergy put them at risk of anaphylaxis. About half (54%) reported having 2 to 5 reactions in their lifetime. Respondents who reported previously experiencing anaphylaxis were more likely to carry self-injectable epinephrine all of the time ( $p = .03$ ). Likelihood of carrying SIE was dependent upon activities in which the respondent was engaged; most participants (more than 80%) always carried self-injectable epinephrine when traveling and dining in restaurants but less than 60% of participants always carried self-injectable epinephrine when with friends, participating in sports or wearing tight clothing.

Sampson et al. (2006) found that in comparison to other activities, adolescents with food allergy were more concerned about school, making friends, and staying fit than about their food allergies. Over half of the respondents (54%) reported eating small amounts of food containing known allergens. Reasons for knowingly ingesting allergens included wanting to eat what friends were eating, they were with their friends, "it looked good and... wanted to eat it," previous ingestions of food didn't cause reaction, or didn't want to ask about ingredients. Other researchers (Greenhawt, Singer, & Baptist, 2009) have found similar risk taking behavior among CU students with food allergies (57% of 513 students) whereby students reported not always

avoiding foods that cause allergic responses for the following reasons: no history of severe reaction, perceived low risk, and/or belief that small amounts of allergen won't trigger reaction, belief that reaction can be treated if occurred. Despite adolescent and young adults' documented tendency of taking risks with their food allergies, it is the responsibility of the higher education institution to provide reasonable accommodations when students with known allergies make allergies known to CU professionals.

### **Food allergy accommodation efforts**

Elan (2006) reviewed trending issues discussed by CU foodservice professionals at the 2006 NACUFS annual conference. One identified trend was challenges CU foodservice workers and administrators faced in regards accommodating patrons with food allergies in a cost effective manner. One of the speakers, a CU nutrition services manager, asserted accurate ingredient labeling for all food items was important to food allergy accommodation though may have been a source of liability to the operation if ingredients were labelled incorrectly, inadvertently putting students with allergies at risk. The consensus was that everyone employed within the foodservice department was responsible for accommodations and thus should have food allergy knowledge, understand their roles in accommodating students with food allergy, and prevent cross contact throughout the flow of food (Elan, 2006).

Later, Rajagopal and Strohbahn (2011) used a web-based survey to examine CU foodservice directors' perceptions on food allergy accommodation policies and practices. The study revealed food allergic reactions were fairly common among participating foodservice directors' student populations. Over half (n=58 of 95) of participants reported known incidences of severe food allergic reactions during their employment at the current CU. Despite the common occurrence of food allergic reactions, the study revealed lack of published food allergy

policies. Most participants (n=72) indicated there were no food allergy accommodation policies in place at the institutional level and about half (n=54) indicated there were no policies at the departmental level. About half (n=24) of those who reported no formal food allergy policies (either institutionally or departmentally) said they were in the process of developing policies. Participants agreed there was a need for developing a policy template for food allergy accommodations in CUs.

Choi and Rajagopal (2013) investigated food allergy knowledge, attitudes, practices and training among foodservice workers (students and non-students) at one Midwestern university dining operation. Foodservice workers were knowledgeable as indicated by answering an average of 8.62 out of 11 food allergy knowledge items correctly. Most respondents were knowledgeable about food allergic reaction time, food allergic reaction prevention measures, allergy definition, sources of cross-contact, and appropriate response to food allergic reactions. Differences in scores were found based on student status. That is, researchers found non-student employees (generally full-time) had significantly greater knowledge scores, more favorable food allergy attitude scores, greater food allergy practice scores, and had received more training as compared to student employees(part-time). Non-student employees perceived training needs to be more necessary than student employees. Employees with food safety certifications had more favorable attitudes and received more training than employees without food safety certifications. Furthermore, employees with favorable attitudes were more likely to report following food allergy practices such as avoiding cross contact.

From the student perspective, Greenhawt et al. (2009) examined trends in food allergies and behavioral attitudes among students at the University of Michigan, Ann Arbor. A small percentage (3.5%) of students with food allergies (n=287) indicated dining services staff were

aware of their food allergies. Yet, despite the fact that many of these students (43.2% of 287) didn't prepare their own food, only 24.2% (n=30) indicated their food preparers (e.g. parents, friends, restaurant workers) were aware of their allergies. Students reported there was insufficient labelling to identify food allergens in the dining hall and lack of alternatives available if a main course contained the food to which they were allergic. Greenhawt et al. (2009) suggested college and university dining services ensure clear labelling of key allergens in foods, avoid cross contact in food preparation areas, and provide alternatives to items with offending key allergens. Other studies have identified students' desires for their school to provide wider meal selection options, designated allergen-safe areas in the cafeteria, staff members to serve as contact persons to discuss food allergies and meals, and education opportunities for other students about food allergies (Sampson et al., 2006).

Rajagopal and Strohbehn (2011) indicated in their study that the development of an operational plan and policy is a best practice for addressing food allergies in the retail foodservice setting thereby decreasing the risk of allergic reactions. No known, validated method for assessing the quality of food allergy accommodation policies exists at this time. However, there may be opportunity to utilize a quality assessment approach similar to that used to evaluate K-12 school wellness policies. WellSAT, an evaluation tool, includes a standardized coding system that can be used to evaluate quality aspects including the comprehensiveness and strength of school wellness policies (Schwartz, Lund, Greves, McDonnell, Probart, Samuelson, & Lytle, 2008). Items included in WellSAT instrument were developed based on state and federal wellness policy requirements. The comprehensiveness measurement represents the proportion of items that are mentioned in the policy whereas the strength measurement represents the proportion of items that are mentioned using specific and descriptive verbiage

(Schwartz et al., 2008). A similar approach may be employed to evaluate policy quality, both comprehensiveness and strength of CU food allergy accommodation policies.

The food allergy accommodation operational plan and policy at the foodservice department level may be influenced by other levels and/or departments of the organization (e.g. risk management, legal liabilities or perhaps office for students with disabilities). In order to assess current policies at the foodservice department level, underlying organizational perspectives that drive the policies must be understood. Therefore, the current research will examine the organizational culture of foodservice departments at both private and public higher education institutions and how culture may affect food allergy policy implementation.

### **Organizational Culture: A Theoretical Framework**

Organizational theories can be useful to college and university administrators to: group phenomena and identify patterns and connections within the organization; analyze and confront challenges more objectively by viewing them through a theoretical lens; and promote systemic thinking by recognizing the interpersonal relationships that exist across the organization (Bess & Dee, 2008). Though organizational culture, as a theoretical framework, is thought to have its foundation in culture theory (Dauber, Fink, & Yolles, 2012) as opposed to organizational theory, the application of the organizational culture framework may have similar uses. That is, application of the organizational culture framework can help identify patterns in how things are done within an organization and, perhaps, provide explanation for how challenges are confronted and changes come about within the organization.

The culture of an organization governs the way things are done within that organization; without properly understanding the culture, it is increasingly difficult to initiate change. In fact, research has shown a frequently cited reason for failed initiatives within an organization (e.g.

total quality management, strategic planning, and organizational change initiatives) is disregard for the organization's culture (Goss, Pascale, & Athos, 1993; Green, 2012).

Davidson (2003, p. 206) indicates organizational culture is “made of up shared beliefs and values that are passed on to all within the organization.” Cameron and Quinn (2006, p. 17) declare an organization's culture is “reflected by what is valued, the dominant leadership styles, the language and symbols, the procedures and routines, and the definitions of success that make an organization unique.” Schein (1990, p. 111) offers the following definition of culture:

...a basic pattern of assumptions, invented, discovered, or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore is taught to new members as the correct way to perceive, think, and feel in relation to those problems.

Essentially, organizational culture is the way things are done in an organization. Scholars studying organizational culture agree the concept of culture is both tangible and intangible. A prominent conceptualization of organizational culture is that it exists at three levels: artifacts (observable level); values and basic assumptions (inferential levels); organizational culture can be measured using direct observation of artifacts and behaviors which serve as the basis for inferences of organizational members' underlying values and assumptions (Bess & Dee, 2008, pp. 358-399).

### **Organizational culture in higher education**

Colleges and universities are complex organizations that are constantly evolving as environmental, structural, and cultural challenges are confronted. William G. Tierney (1999) discussed the importance of organizational culture in creating a higher education institution responsive to the needs of its faculty and staff. Similarly, organizational culture is important to



ensuring responsiveness to the needs of students as well. Tierney (1999, p. 167) refers to organizational culture as a compass which should be used to guide organizational action; without using this compass it becomes increasingly difficult to orchestrate change. Strong and consistent cultures foster a more favorable environment for creating change than weak and contradictory cultures (Tierney, 1999, p. 131).

### **Competing Values Framework**

The competing values framework is a well-established perspective from which organizational culture may be studied. The competing values framework has been described as “a model that defines organizations and the leaders running them according to four styles, the four quadrants of a table bounded by the extremes of two axes: flexibility and discretion versus stability and control; and internal focus/integration versus external focus/differentiation” (Garman, 2006).

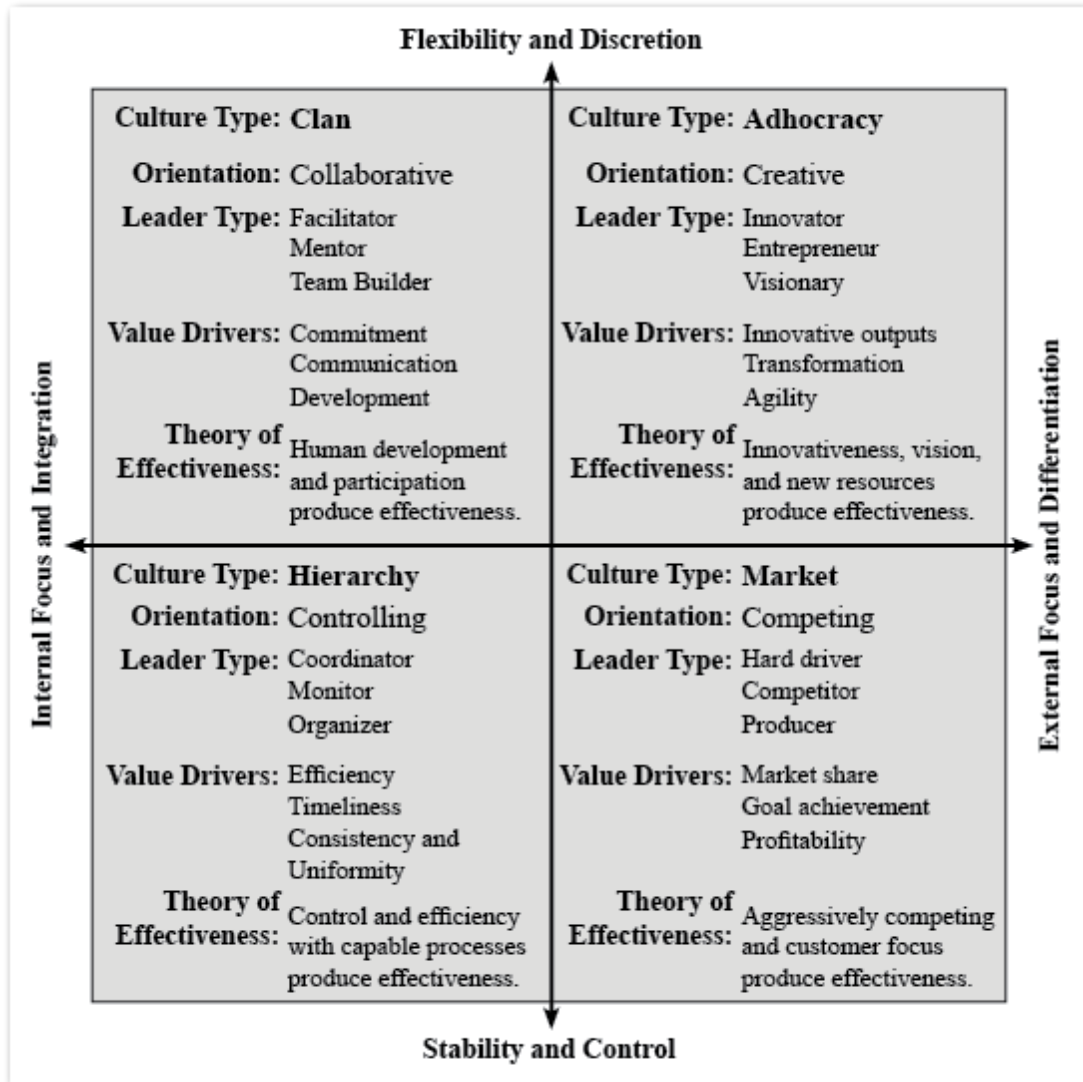


Figure 2.1. The competing values of leadership, effectiveness, and organizational theory.

Figure credited to Cameron & Quinn (2011, p. 53), permission document and copyright information in Appendix D and Appendix E. Each of the four quadrants represent culture types including clan, adhocracy, hierarchy, and market cultures. Each culture types is comprised of distinct characteristics. Clan culture (or collaborative culture) is characterized by high commitment to the organization, high regard for the development of human resources, emphasis on teamwork and participation, and friendliness similar to that of family atmosphere (Cameron &

Quinn, 2011, pp.46-48). Clan culture organizations feature friendly environments in which members (employees) share a lot about themselves; the leadership teams are regarded as mentors, or parent figures in the family analogy; and the long term impact is loyalty among members and establishing traditions.

Hierarchy (or control) culture organizations have an internal focus; they embody the classic bureaucratic attributes emphasizing stability and consistency. Hierarchy culture is characterized by formal hierarchical organizational structures, high regard for efficiency, policy and procedure; and long-term concern with stability and performance of the organization (Cameron & Quinn, 2011, pp. 41-43).

Market (or compete) culture has an external focus, with attention paid to external factors impacting the organization including suppliers, customers, contractors, and competitors. Market culture is characterized by result-oriented mindsets; competitiveness; high regard for reputation of success; and a long-term concern with market share and competitive pricing (Cameron & Quinn, 2011, pp. 43-46).

Adhocracy (or create) culture has an external focus and creative orientation emphasizing flexibility and discretion. This culture type is characterized by dynamic, innovative and creative environments; willingness to take risks for greater rewards; and long-term concern with growth and offering of new products and services (Cameron & Quinn, 2011, pp. 49-51).

## **Applications**

The Organizational Culture Assessment Instrument ([OCAI] Cameron & Quinn, 2011), an instrument developed to measure organizational culture within the competing values framework, has been employed in numerous research studies to measure organizational culture

in various CU settings (Fralinger & Olson, 2007; Kleijnen, Dolmans, Muijtjens, Willems, and Van Hout, 2009; Mohammed, & Bardai, 2012; Ramachandran, Chong, & Ismail, 2011).

Fralinger and Olson (2007) used the OCAI to examine student perceptions of culture at the academic department level within one college in the US. Results were then used to evaluate whether departmental and institutional goals/objectives were being met. Clan culture, characterized by familial feelings, concern for people, and commitment to teamwork, was both the perceived and desired culture of the department. Participants' ratings of a clan culture provided evidence that achievement of departmental and institutional goals of providing a collaborative, learning centered environment were met (Fralinger & Olson, 2007).

The OCAI was used to examine Netherlands higher education faculty members' perceptions and preferences about organizational culture (Kleijnen et al., 2009). As explained by Kleijnen et al. (2009), the OCAI measures each of four competing values which can be plotted on the aforementioned matrix depicting dimensions of control - flexibility and internal - external orientation: market culture emphasizes control with an external focus; hierarchy emphasizes internal control and internal focus; clan culture emphasizes internal control and flexibility; adhocracy culture emphasizes external control and flexibility. The study revealed both flexibility and control oriented cultures were evident across the 18 academic departments in which the respondents worked, though respondents preferred the clan culture emphasizing flexibility and internally oriented values. Kleijnen et al. (2009) concluded at one university in the Netherlands, higher education faculty members' perceptions of organizational culture were not in alignment with their preferences and suggested academic departments attend to human relations values, development of human relations, flexibility, innovation, and growth.

Ramachandran et al. (2011) used the OCAI to examine faculty members' perceptions of organizational culture in private and public CUs in Malaysia. Data revealed organizational culture scores for public institutions were higher than scores for private institutions: clan culture was rated the highest among respondents from public institutions followed by hierarchy culture. The dominance of clan culture within public institutions implied a collaborative culture in which faculty work together to complete tasks such as research and other scholarly activities (Ramachandran et al., 2011). Faculty from private institutions rated hierarchical and market cultures higher than adhocracy and clan cultures; authors suggested emphasis of market culture in private institutions was perpetuated by the need to recruit students and attend to other activities that generate income for this type of institution (Ramachandran, Chong, & Ismail, 2011). Hierarchical cultures were prominent in both public and private institutions, albeit to varying degrees; this may be due to emphasis being placed on rules, procedures and stability in higher education institutions.

Mohammed and Bardai (2012) investigated the relationship between organizational culture types (as identified by the competing values framework) and organizational innovation (technical and administrative). Faculty, executives and administrators at three universities in Libya ( $n = 312$ ) completed an OCAI containing questionnaire. All four organizational culture types (market, hierarchy, clan, adhocracy) were significant predictors for technical innovation among which market culture had the strongest association. Mohammed and Bardai (2012) inferred competitiveness, goal achievement, and market superiority (components of market culture) were important influencers for technical innovation, defined as new products, processes, or services, in Libyan public universities. Each of the four organizational culture types were significant predictors for administrative innovation among which hierarchy culture had the

strongest association. Therefore, Mohammed and Bardai (2012) deduced internal focus on efficiency, stability and dependability (components of hierarchy culture) were important influencers for administrative innovation in Libyan public universities. Potential application

As illustrated, the OCAI has been used to examine organizational culture as perceived by academic faculty and staff at higher education institutions in various countries including the Netherlands, Malaysia, and Libya. Studies have revealed differences between staff members' perceived and preferred organizational culture (Kleijnen et al., 2009); alignment of perceived cultures and achievement of organizational goals and objectives (Fralinger & Olson, 2007); differences between organizational culture types at private and public institutions (Ramachandran et al., 2011), and the relationship between organizational culture types and organizational innovation (Mohammed & Bardai, 2012). Future inquiry using OCAI may extend beyond the perceptions of staff members within the academic branch of the higher education organization. The instrument can be used to investigate organizational culture perceived by student affairs professionals, particularly those within auxiliary units such as foodservice.

It has been shown, in a context outside of higher education, that individuals' memberships in social-interaction groups impacted interpretation of organizational events (Rentsch, 1990). That is, members within social-interaction groups interpreted organizational events the same whereas different social-interaction groups interpreted organizational events differently. Results of Rentsch (1990) provided empirical evidence for the existence of subcultures within an organization. According to social constructivists, organizational culture descriptors may not sufficiently represent the qualitative nuances of an organization's culture or subculture; and this differentiation perspective acknowledges subcultures within an organization (Bess & Dee, 2008, pp. 358-399). This finding can be extended to the CU setting in which one

might postulate a subculture exists within the academic branch and additional subculture(s) exist within the student affairs branch or auxiliary units. That is, perspectives of organizational culture may differ for academic staff in different academic departments, and student affairs staff due to the existence of subcultures.

### **Organizational Culture in the Service Industry**

Scholars have investigated the impact of organizational culture on various aspects of the service industry. For example, Asree, Zain and Razalli (2010) investigated the effect of leadership competency and organizational culture on Malaysian hotel firms' responsiveness to customers and employees and performance of the firms. Responsiveness was defined as "the ability of organization to respond to its customers' needs in terms of quality, speed and flexibility" (Asree et al., 2010, p. 505). Questionnaire data revealed leadership competency and organizational culture can positively impact an organization's responsiveness to customers and employees and this heightened responsiveness may increase hotel revenue. Findings supported the notion that financial success of service-oriented organizations is dependent on more than structural aspects; it also depends on soft or infrastructural aspects such as organizational culture and leadership competencies (Asree, Zain, & Razalli, 2010).

Dawson, Abbott, and Shoemaker (2011) developed a culture scale specific to the hospitality industry, taking into account both organizational culture and personal attributes of those employed within the industry. From this inquiry, four distinct factors of organizational culture in the hospitality industry emerged: management principles, customer relationships, job variety and job satisfaction. Six personal factors were identified: principles, propitiousness, leadership, risk taker, accuracy, and exposure. Dawson et al. (2011) indicated the key to

employee retention and success is ensuring personal attributes are in alignment with the organizational culture of the hospitality industry.

Koutroumanis and Alexakis (2009) sought to make recommendations for cultural development among restaurant leaders based on findings from published research. Findings indicated development of clan culture may be beneficial for foodservice organizations. That is, a culture in which members exhibit high levels of autonomy while being part of the ‘family’ of the organization; this culture is said to stimulate loyalty, commitment and participation among members. Foodservice organizations with clan culture may experience less employee turnover, greater productivity, and higher levels of service which may ultimately impact customer satisfaction, increased repeat patronage and ultimately increased profits (Koutroumanis & Alexakis, 2009).

Pertaining to this line of inquiry, research may examine foodservice professionals’ perceptions of organizational culture (especially pertaining to food allergy management) at the foodservice department level and this may provide an explanation for variation in food allergy accommodation policies and practices among CUs. Furthermore because the literature has shown vast application of the OCAI across disciplines, including academic branches of higher education institutions, and because the instrument has been validated and determined reliable, the OCAI was used in this study.

### **Summary**

This review of literature illustrated the need for food allergy accommodation policies in CU foodservice operations given the specific challenges faced when serving college students with food allergies. Rajagopal and Strohbehn (2011) found a lack of formalized food allergy accommodation policies in place at CUs despite CU foodservice directors recognizing the



usefulness of policies and procedures when serving students with food allergies. Since the Rajagopal and Strohbehn (2011) study, the Lesley settlement occurred potentially heightening awareness about potential legal liabilities associated with food allergic reactions on campus or other insufficient accommodations for students with special dietary needs. Given these developments, research is needed to further investigate food allergy accommodations in CUs. Though the competing values framework has been used to investigate organizational culture in CU academic departments, no known research has applied the competing values framework to studying organizational culture in CU foodservice departments.

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## **CHAPTER 3: METHODOLOGY**

### **Introduction**

The review of literature illustrated the current and anticipated need for food allergy accommodation practices in CUs. Teenagers and young adults are most likely to take risks with their food allergies (Sampson, Munoz-Furlong & Sicherer, 2006). Despite adolescent and young adults' documented tendency of taking risks with their food allergies, it is the responsibility of CUs to provide reasonable accommodations when students with known allergens eat in CU settings. Accommodating students with food allergies in CU foodservice setting is challenging considering potential liability issues related to allergic reactions to foods eaten on campuses (Elan, 2006). The development of an operational plan and policy is the best approach for effective food allergy accommodation management in CU foodservice operations (Rajagopal & Strohbehn, 2011). In order to assess current policies in place at CUs, organizational cultures that may influence development, implementation, and monitoring of policies must be understood. Therefore, the current research examined the organizational culture of CU foodservice operations and how it may affect the presence of food allergy policies and reported procedures.

The specific research objectives were to:

1. Analyze formal (published) policies and procedures for food allergy accommodation in CU foodservice operations.
2. Determine whether variation in food allergy accommodation practices exist between different types of CU foodservice operations.
3. Evaluate food allergy accommodation practices in CU foodservice operations.
4. Identify prominent organizational culture types among CU foodservice operations.
5. Explore CU foodservice directors' conceptualization of culture within the operation.

6. Examine impact of the culture of CU foodservice operations on food allergy accommodation practices.

### **Hypotheses**

Based on previous literature, six hypotheses were determined as follows:

H<sub>1</sub>: Public CUs will have greater likelihood of formalized food allergy accommodation policies in comparison to private CUs.

H<sub>2</sub>: Contract managed operations will have greater presence of formalized food allergy accommodation policies at the departmental level than self-operated.

H<sub>3</sub>: Private CUs will follow a greater number of food allergy accommodation practices in comparison to public CUs.

H<sub>4</sub>: Clan culture will be the predominant organizational culture type in CU foodservice departments.

H<sub>5</sub>: Food allergy accommodation practices will differ based on culture type of the CU foodservice operations.

H<sub>6</sub>: Comprehensiveness of food allergy accommodation policies will differ based on the culture type of the CU foodservice operations.

### **Use of Human Subjects**

Because this research involved human subjects, the study was approved by the Iowa State University Human Subjects Review Board (IRB) prior to contacting any participants. All researchers carrying out the study have completed Iowa State University's Human Subjects Research Assurance Training. Study participants were informed of the purpose of the study and notified of confidentiality measures that were employed; participants' consents were obtained before data collection (Appendix A).

## **Research Design**

This study employed an explanatory sequential mixed design; that is, quantitative and qualitative methods were employed consecutively such that results from the quantitative phase inform the qualitative phase (Fetters, Curry, & Creswell, 2013; Nastasi, Hitchcock, & Brown, 2010). The first phase consisted of online administered questionnaires investigating current food allergy accommodation practices in CU foodservice operations using organizational culture as a theoretical framework. The second phase consisted of interviews providing more in-depth explanations of first phase results.

## **Questionnaire**

The first phase of this study involved the development and administration of a questionnaire to survey a nationwide sample of CU foodservice professionals. Participants were asked to identify organizational culture aspects of their foodservice operations; identify existing policies and procedures for food allergy accommodation; and indicate food allergy accommodation practices observed at their foodservice operations. The following discussion explains sample selection, questionnaire content, pilot study, and data analysis.

## **Sample selection**

The target population for this study was foodservice professionals at CUs in the United States. Participants were recruited from the 2014 National Association of College and University Food Services (NACUFS) member directory. One foodservice professional from each of the 359 four-year, US, institutions listed in the directory was invited to participate. The first person listed for each qualifying school was selected; this was typically the director. However, in the event the foodservice director was not listed in the directory, then either a manager, dietitian, or nutritionist was selected.

The primary researcher contacted NACUFS about the study and followed NACUFS established protocol for participant recruitment. Per this protocol, an invitation e-mail was sent by a current NACUFS voting delegate on behalf of the researcher (Appendix B). The e-mail explained the purpose of the study, confidentiality measures, and contained a link to the survey content. The e-mail also asked the recipient to forward the invitation to the person within the department who was most knowledgeable about food allergy accommodations efforts. The online questionnaire was hosted using Qualtrics®; consent was required prior to beginning the survey. A random drawing for ten thank-you gifts valued at \$25 was employed to encourage participation.

### **Content**

The web-based questionnaire was first developed using Microsoft Office Word, and then converted to Qualtrics® for online administration. The initial web page of the survey contained an introduction explaining the study's purpose and the informed consent (Appendix C). Participants voluntarily consented to participating prior to accessing questionnaire content.

A questionnaire containing three sections was developed and used for this study. Several items were adopted and adapted from previous research; permission from authors were obtained prior to use. The first section of the questionnaire contained 12 items to gather demographic data about participants. Though questionnaire experts suggest demographic items be positioned last (Dillman, Smyth, Christian, 2009) questionnaire content was deliberately ordered to reduce attrition. The second section of the questionnaire gathered information about current food allergy accommodation policies at CUs and foodservice professionals' perceptions of how food allergy accommodation practices are implemented. Eight items, adapted from Rajagopal & Strohbehn (2011), asked whether various elements of food allergy accommodation policies were

in place at the institutional and/or departmental levels. One question, containing 10 statements, addressed whether specific food allergy accommodation practices occur at their CU operations (e.g. menu substitutions for students with food allergies).

The third section consisted of an adapted Organizational Culture Assessment Instrument (Cameron & Quinn, 2006, pp. 26-28). Permission was received prior to use of the instrument (Appendix D). See Appendix E for the copyright notice. Using an ipsative scale, participants were asked to rate their foodservice departments in each of six dimensions: dominant characteristics, organizational leadership, and management of employees, organizational glue, strategic emphases, and criteria of success. For each dimension, participants assigned points to each of four statements such that the statement assigned the most points was perceived most similar to their foodservice departments. Points assigned to each statement within each dimension had to sum 100. The Qualtrics© hosted questionnaire assisted respondents with appropriate entry of points by alerting the participant if an error was made (e.g. if points did not sum 100 per dimension). See Appendix F for a copy of the questionnaire.

After completing the online questionnaire, participants had the option to enter a drawing for a \$25 Amazon Gift Card and the opportunity to volunteer for a follow up interview. Questionnaire data collected from the first three sections was stored in a separate data base from these additional items. Therefore, contact information was not linked to any questionnaire data.

### **Pilot study**

A pilot test was conducted to identify potential problems with the questionnaire and distribution procedures (Dillman, Smyth, & Christian, 2009). This pilot test occurred in two phases. First, five experts, committee members, were asked to review the questionnaire and provide feedback on content, readability and format. Three committee members provided

feedback which was used to revise the questionnaire. Then, the questionnaire was administered to a subsample (n=6) of the target study population. See Appendix G for a printed copy of the invitation e-mail sent to participants; and Appendix H for the pilot study informed consent. Pilot study participants were asked to evaluate readability of questionnaire items, time for completion, and provide suggestions for improvement via pilot feedback evaluation form (Appendix I). Again, feedback was used to revise the questionnaire and administration procedures. Pilot test data were not included in the final analyses and pilot study participants were not included in the study sample.

Many changes were made to the original questionnaire as a result of the pilot study. The pilot study prompted revisions for clarity including the definition of policy versus procedures. The initial questionnaire asked which version of the Food Code their state had adopted. Three participants from the same state provided three different responses. This indicated foodservice professionals may not have the knowledge to accurately respond to this question. The final questionnaire did include the question with the addition of an “I don’t know” response option. Also, state data were collected to enable the researcher to match state to Food Code to verify accuracy. Findings are reported in Appendix J.

Three foodservice professionals who participated in the pilot study were from the same institution; these included a director, dietitian, and manager. It was noted the manager and dietitian (both of whom worked closely with the special diet program) responded similarly when asked about food allergy accommodations policies and procedures. Comparatively, the director from the same operation appeared to over-report accommodation efforts. This finding prompted a change in recruitment efforts for the study. Initially, the study sample included only foodservice directors. However, because persons involved in food allergy accommodation

programs work more closely with students and therefore were better able to represent actual practice, the invitation e-mail asked the recipient to forward to the person most qualified to respond to allergy-related questions.

### **Distribution**

Distribution of the questionnaire followed guidelines set forth by Dillman et al. (2009). The initial contact with potential participants occurred via e-mail in November, 2014 on a weekday morning to increase the likelihood of responses. The second e-mail contact, sent 14 days later, was used to recruit additional participants (Appendix B); this e-mail was sent to the same 359 foodservice professionals as the initial e-mail. The second contact e-mail was slightly tailored as experts recommend (Dillman et al., 2009). Only one follow-up invitation e-mail was sent after the initial invitation due to the agreement made with the NACUFS member who assisted with invitation e-mail distribution.

### **Data analysis**

Data gathered from the questionnaires were downloaded from Qualtrics© and transferred to SPSS 22.0 for analysis. Descriptive statistics, including analysis of distributions, central tendencies, and dispersion of data were computed. Initially, chi-square was used to test  $H_1$  and  $H_2$ ; and an independent sample t-test was used to test  $H_3$ . To testing sensitivity, two sample population proportion tests were used to test  $H_1$ ,  $H_2$ , and a pooled sample t-test was used to test  $H_3$ ; ANOVA was used to test  $H_5$  and  $H_6$ . Analysis of the OCAI scores was used to determine the most prominent organizational culture type (i.e. hierarchical, clan, adhocracy and market) as perceived by CU foodservice professionals ( $H_4$ ).

The OCAI helps assess six dimensions of organizational culture: dominant characteristics, organizational leadership, management of employees, organizational glue,

strategic emphasis and criteria of success (Cameron & Quinn, 2006). For each dimension, respondents divided 100 points among the four alternatives giving greater ‘weight’ to the alternatives that best described their organization. These four alternatives, which can be labeled A, B, C, and D for each of the six dimensions corresponded to an organizational culture type. For example, the first alternative for each dimension (A) described clan culture, the second alternative (B) described adhocracy culture, the third alternative (C) described market culture and the fourth alternative (D) described hierarchy culture. Scores for each alternative (i.e. A, B, C, D) were added and divided by the 6 (the number of dimensions) to give a mean score for corresponding to each culture type. Therefore the largest mean score indicated the prominent organizational culture. This determination was the basis for testing H<sub>4</sub>, H<sub>5</sub>, and H<sub>6</sub>.

### **Interviews**

One-on-one telephone interviews were employed to provide deeper explanation of food allergy accommodation procedures and potential interplay with organizational culture of CU foodservice operations. The following discussion explains sample selection, content and analysis of the interview phase.

### **Sample selection**

Questionnaire participants had the opportunity to volunteer for a follow up interview at the completion of the web-based questionnaire; 42 questionnaire participants volunteered by providing contact information. This contact information was stored in a database separate from the questionnaire data to ensure anonymity of questionnaire responses. Based on e-mail addresses, the researcher identified participants’ institutions and then organized volunteers by region. Then two volunteers were selected from each region in the following manner: If only two foodservice professionals volunteered from the same NACUFS region, request for



participation was sent to both professionals within that region. If more than two foodservice professionals volunteered from one region, two were randomly selected. Random selections was done using random number assignment, and participants with the lowest numbers were contacted via e-mail. A follow up invitation e-mail was sent after one week. If no response was given after the second e-mail was sent, then another foodservice professional from that region was randomly selected. This purposeful convenience sampling technique yielded 11 participants; all six NACUFS regions were represented in the final sample. No new major themes emerged after analysis of the interviews, so no further interviews were conducted.

### **Content**

All interview questions were open-ended to encourage ample opportunity for participants to express themselves as opposed to confining responses to one or two words. An interview guide was developed based on phase one results. The researcher followed this interview guide, however follow up questions were asked to help elicit more in-depth responses, clarifications or examples from participants (Rossman & Rallis, pp. 182-185). Interview length ranged from 22 to 46 minutes depending on participant responses. In two instances, all items on the interview guide were not asked due to time constraints.

### **Data collection**

Once potential volunteers were selected, they were contacted via e-mail to set up an interview time. Participants were e-mailed the informed consent document (Appendix K); they printed, signed and returned the document electronically. The researcher ensured an informed consent was completed prior to interview commencement. The interview guide was used as a guideline to ensure necessary information was provided during the conversation (e.g. anticipated

length of interview, expression of gratitude for interest in study, informed consent procedures, agree upon interview appointment). See Appendix L for a copy of the interview guide.

The researcher contacted participants at the agreed upon time via telephone and served as the facilitator. Notes were taken to aid facilitation of the interview and used for development of follow up questions; and with permission, the researcher audio recorded the interviews using a speakerphone and digital recorder.

### **Data analysis**

Audio tapes of the phone interviews were transcribed by an experienced hired transcriptionist within a few weeks of interviews. Participants were asked not to mention the names of people or their institutions during the interview to ensure anonymity of participants; confidentiality of interview transcripts was maintained. Member checking was done to ensure validity. That is, transcripts were sent to all interview participants who were asked whether the findings were an accurate depiction of their experiences (Creswell & Clark, 2007). Ten of 11 participants participated in the member checking process and verified accuracy. Following recommendations by Miles and Huberman (as cited in Creswell & Clark, 2007), three researchers independently coded transcripts by hand and then agreed upon codes and themes prior to use in remaining analyses. A complete listing of themes, codes, and illustrative quotes is included in Appendix M.

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## **CHAPTER 4: A MIXED METHODS APPROACH TO EXAMINING FOOD ALLERGY ACCOMMODATION EFFORTS IN COLLEGES AND UNIVERSITIES**

A paper to be submitted to the *Journal of Foodservice Management and Education*

Kelly N. Abdelmassih, Lakshman Rajagopal, & Susan W. Arendt

### **ABSTRACT**

The purpose of this research was to explore current food allergy accommodation practices and policies in colleges and universities using a sequential explanatory mixed methods design.

Seventy-six (22.2% response) foodservice professionals responded to a national survey; 11 of whom participated in follow up interviews during the second phase. Most (74%) questionnaire participants reported departmental level food allergy policies existed at their institutions while 34% participants reported presence of institutional level policies. Differences in the likelihood of published policies existed according to institutional demographic characteristics (e.g. institution type, foodservice management type), however findings suggest variability in CU foodservice professionals' approach to accommodations, regardless of the presence of policies.

Key Words: food allergies, foodservice, college dining, mixed methods

### **ACKNOWLEDGEMENT**

A research grant from the Food Service Systems Management Education Council, 2014, funded this study.

### **INTRODUCTION**

Food allergies are a serious condition which can cause potentially life-threatening immunological reaction to ingesting specific food items (Branum & Lukacs, 2008). Food allergies impact about 15 million Americans (Food Allergy Research and Education [FARE], 2014). Ingestion of food allergens by affected individuals can cause symptoms involving various

systems including respiratory tract, skin and mucous membranes, digestive tract and the nervous system (FARE, 2014) or can even cause death by anaphylaxis (Bock, Munoz-Furlong, & Sampson, 2001; Sampson, Mendelson, & Rosen, 1992). Researchers have shown food allergies can have psychosocial impacts on individuals with food allergies as well (Bocket al., 2001; Sampson et al., 1992; Cummings, Knibb, King, & Lucas, 2010). Minimizing the risk of food allergic reactions requires avoidance of foods containing known allergens (FARE, 2014) which may be difficult – especially when food allergic individuals dine away from home. Difficulty in food avoidance when dining away from home may be compounded when a substantial proportion of an individual's dietary intake come from foodservice operations, such as school or college and university (CU) dining. Foodservice operations' failure to safely accommodate food allergic patrons is documented (Knoblauch, 2009; Kwon & Lee, 2012).

#### Food Allergy Accommodations in Schools

Section 504 of the Americans with Disabilities Act of 1990 (ADA) indicates an individual with a disability cannot be denied benefits of any program or service receiving federal funding based on his/her disability. Reasonable accommodations must be made to meet the needs of students with disabilities to the extent that other students' (without disabilities) needs are met (U.S. Department of Education, 2009). This legislation has implications for K-12 schools and higher education institutions as both may receive federal funding and potentially serve students with food allergies, which can be considered a disability under the ADA. Given the increased prevalence of food allergies among children and adolescents (Branum & Lukacs, 2008, 2009), the legal requirement to accommodate, and a general concern for students' overall well-being, K-12 school officials must take efforts to ensure safe environments for food allergic students. Food allergy accommodations in K-12 schools have received considerable attention (Molaison &

Nettles, 2010; Sheetz et al., 2004). The recent School Health Policies and Practices Study (SHPPS) conducted by the Centers for Disease Control and Prevention (CDC) revealed 84% of states distributed model policies, policy guidance or other materials addressing severe food or other allergies (U.S. Department of Health and Human Services, CDC, 2013).

Section 112 of the Food Safety Modernization Act (2011) called for the development of voluntary guidelines to manage food allergy in early childhood education facilities. Therefore, the *Voluntary Guidelines for Managing Food Allergies in Schools and Early Care and Education Program* was developed and released by the Centers for Disease Control and Prevention (CDC, 2013). These guidelines provide K-12 professionals with practical information and recommendations for reducing risk of food allergic reactions in the school environment.

#### Food Allergy Accommodations in Colleges and Universities

College and university (CU) foodservice operations face unique challenges when accommodating students with food allergies. Adolescents and young adults are the most susceptible demographic to experience food allergy induced anaphylaxis due to risk taking behaviors, failure to recognize symptoms of anaphylaxis, and failure to carry and/or administer self-injectable epinephrine in a timely manner (Bock et al., 2001; Sampson et al., 1992; Sampson, Munoz-Furlong, & Sicherer, 2006). A review of 32 cases of fatality due to food allergy induced anaphylaxis revealed 21 (66%) were adolescents or young adults between the ages of 13 and 21 (Bock et al., 2001). Sampson, Munoz-Furlong and Sicherer (2006) found that in comparison to other activities, adolescents with food allergies were more concerned about school, making friends, and staying fit than about their food allergies.

Legal implications for CUs can occur when college students are not adequately accommodated. In 2009, the U.S. Department of Justice received a complaint that Lesley University had violated the ADA because reasonable accommodations were not made for students with celiac disease. The settlement concluded that Lesley University staff violated the ADA by not offering students with celiac disease an equivalent college dining experience as other students. The settlement between the Department of Justice and Lesley University outlined steps the institution was required to make including establishing and implementing policies and procedures to accommodate students with food allergies (U.S. Department of Justice, 2013). This case set a legal precedent as it was the first time a higher education institution and the Department of Justice settled an alleged violation of the ADA pertaining to dietary accommodation (HSE Legal Currents, 2013). The details of the settlement have practical implications for professionals of other CUs, outlining measures that can be taken to accommodate students with celiac disease and other diet-restricting conditions such as food allergies (Celiac Community Foundation of Northern California, 2013; Grasgreen, 2013; HSE Legal Currents, 2013).

Though limited research regarding food allergy accommodations practices in CUs exist, known studies have examined food allergy management from various perspectives including foodservice workers (Choi & Rajagopal, 2013), students with food allergies (Greenhawt, Singer, & Baptist, 2009), and foodservice directors (Rajagopal & Strohbehn, 2011). Rajagopal and Strohbehn (2011) examined CU foodservice directors' perceptions and attitudes toward food allergy accommodation practices and policies. Foodservice directors reported lack of published food allergy policies both at the institutional level (72 of 95 had no institutional policies) and foodservice department level (52 of 95 had no department policies) (Rajagopal & Strohbehn,

2011). Because the environment for CU food allergy accommodations may have changed in the five years that have passed (e.g. Lesley settlement, *Voluntary Guidelines* in the K-12 sector) since Rajagopal and Strohbehn (2011) published this work, this study examined food allergy accommodation policies and practices that are currently being used in CUs. The specific objectives are to:

1. Analyze formal (published) policies and procedures for food allergy accommodations in CU foodservice operations.
2. Determine whether variation in food allergy accommodation practices exist between different types of CU foodservice operations.
3. Evaluate food allergy accommodation practices in CU foodservice operations.

## METHODS

A two-phase explanatory sequential mixed design was employed to address the research objectives. That is, a more quantitative method (i.e. questionnaires) was used alongside a more qualitative method (i.e. interviews) such that the quantitative phase informed the qualitative phase (Nastasi, Hitchcock, & Brown, 2010). Because this research involved human subjects, approval was obtained by the appropriate university's Institutional Review Board (IRB) prior to contacting potential participants.

### Phase One: Questionnaires

A questionnaire was developed, pilot tested, and administered online to assess CU foodservice professionals' perceptions of food allergy management policies and practices. The questionnaire contained items related to demographics, food allergy accommodation practices and policies, and other questions not reported in this manuscript. The first section collected information about participants, foodservice departments, and institutions represented. The



second section contained items that assessed presence of various elements of food allergy accommodation policies at the institutional and departmental levels; items were adapted from previous research (Rajagopal & Strohbehn, 2011) or developed anew. Additional questions regarding training and operational practices were asked in this section.

Participants were recruited from the 2014 National Association of College and University Food Services (NACUFS) membership directory. One foodservice professional from each 4-year, U.S. institution listed in the directory was selected (n=359). The first person listed in the directory for each qualifying school, typically the director, was selected. However, if the director was not listed, then either a manager or dietitian/nutritionist was selected. Foodservice professionals were contacted by e-mail, and were asked to forward the invitation to the person within their departments most knowledgeable about food allergy accommodation efforts.

Due to firewalls or invalid e-mail addresses, the invitation e-mail reached 342 foodservice professionals. The invitation e-mail contained a link to the Qualtrics<sup>®</sup> questionnaire. Participants had the opportunity to enter a drawing to win a gift card valued at \$25. Distribution of the questionnaire and a follow up reminder followed guidelines set forth by Dillman, Smyth, and Christian (2009).

Questionnaire data were analyzed using *SPSS 22.0*. Descriptive statistics, including analysis of distribution, central tendencies, and dispersion of data were computed. Two sample population proportion tests were used to determine whether the presence of food allergy accommodation policies differed according to demographic characteristics (e.g. institution type, foodservice management type).

Pooled sample t-tests were used to evaluate food allergy accommodation practices in CU foodservice operations. Food allergy accommodation mean practice scores were computed for

each operation. Then, pooled sample t-tests were used to determine whether mean practice scores differed based on the two examined demographic characteristics.

#### Phase Two: Interviews

One-on-one telephone interviews were used to provide deeper explanations for food allergy accommodation policies and practices at CUs. The sample consisted of participants from phase one who indicated willingness to participate in a follow-up interview. Eleven foodservice professionals representing the six NACUFS regions participated in the interviews.

An interview guide was developed based on the review of literature and phase one results; after development, the guide was reviewed by experts for clarity and comprehensiveness. Interview guides are useful to ensure consistency between interviews, and to facilitate efficient analyses (Krueger, 1998). Questions were open ended to encourage ample opportunity for participants to express themselves; and follow up questions were asked during the interviews to help elicit more in-depth responses, clarifications and examples from participants (Rossman & Rallis, 2012). All interviews were audio recorded and an experienced transcriptionist converted the audio to textual transcripts.

Three researchers independently coded transcripts by hand and then agreed upon codes and themes prior to final analysis as recommended by Creswell and Clark (2007). Transcripts were sent to interview participants (n=11) who were asked whether interview transcripts was an accurate depiction of his/her experience. This member checking process was used to ensure trustworthiness of the data as recommended by Creswell and Clark (2007). Illustrative quotes from the interviews are used throughout the results and discussion section; participants are identified by pseudonyms.

## RESULTS AND DISCUSSION

### Profile of Respondents and Institutions

#### Questionnaire

Of the 359 e-mail invitations sent, 17 (4.7%) were undeliverable. Three hundred forty-two e-mail invitations were delivered to foodservice professionals which yielded 81 responses (22.6%). Five questionnaires were unusable due to early survey attrition; incomplete questionnaires were retained for analyses if participants responded to more than half of the questionnaire items. Therefore, 76 questionnaires (22.2%) were deemed usable for analysis. As depicted in Table 1, most participants were age 41-60 years (n=47, 61.9%) and female (n=46, 60.5%). Participants reported a wide range of educational levels ranging from a high school diploma to a PhD; however, most participants held a bachelor's degree (n=38, 50%). About half of the participants (n=35, 46%) had worked in CU foodservice 10 years or less. A large majority (n=67, 88.1%) were certified in food safety through a course approved by the Conference for Food Protection (i.e. ServSafe®).

Forty-five (59.2%) participants worked in public CUs (Table 4.2), and the most represented geographic region was the Midwest (n=26, 35.6%). Institution size, indicated by reported enrollment numbers, ranged from under 1,000 to greater than 50,000. Because the public institutions that were represented had larger enrollments (predominantly 20,000 and more) and private institutions that were represented had smaller enrollments (predominantly less than 20,000), institution type (i.e. public, private) was used as a proxy for institution size. Most participants (n=62, 81.6%) reported their foodservice departments were self-operated and 14 (18.4%) reported their foodservice departments were managed by contracted companies.

## Interviews

Of the 42 questionnaire participants indicating interest in a follow up interview, 17 were purposefully selected to yield a geographically diverse sample. In total, 11 foodservice professionals agreed to participate in the follow up interview representing each of the six NACUFS regions as follows: three from Southern region; one from Mid-Atlantic region, two from Pacific region; one from Continental region; two from Midwest region; and two from Northeast region (see Table 4.3). The number of participants from each region were not proportionate due to volunteers who were unreachable during the interview participant selection and scheduling phase. Seven interview participants represented public institutions and four represented private institutions. The fall 2014 enrollment for represented institutions ranged from 2,800 to 35,441 with an average of 18,388 students. Seven interview participants were nutritionists or Registered Dietitians; three were in a management role (e.g. manager, director); and one was a marketing manager. Length of time participants had held their positions ranged from 8 months to 22 years. All interview participants reported direct involvement with food allergy accommodations efforts at their CUs.

### Presence of Food Allergy Policies

It appears improvements have been made in the development and implementation of food allergy accommodation policies relative to previous research findings. Of questionnaire respondents, 55 (74%) reported food allergy accommodation policies in place at the departmental level while 25 (34%) respondents reported their CUs had food allergy accommodation policies at the institutional level. A 2011 study found only 43% (n=41) participating CU foodservice directors reported policies at the departmental level and 24%

(n=23) reported policies at the institutional level (Rajagopal & Strohbehn, 2011). At that time, about half reported no policies at either level indicating policy development was in progress. Differences in the presence of food allergy policies at the departmental level were examined based on demographics. Differences in the presence of food allergy policies at the institutional level were not analyzed statistically due to the small number (n=25) of participants that reported institutional policies and inability to achieve statistical power.

Two sample population proportions were used to analyze whether public CUs had greater presence of formalized departmental food allergy accommodation policies than private CUs. This statistical test was used to examine whether a difference existed between the proportions of public CUs with policies in comparison to the proportion of private CUs with policies. Results revealed this association was significant at the  $p < .1$  level ( $z = 1.39$ ,  $p = .087$ ). Thirty-six (80%) participants from public institutions and 19 (63%) from private institutions reported food allergy policies in place at the departmental level. Research supports the notion public and private organizations differ on a number of dimensions (Scott & Falcone, 1998). One study found core organizational values differed by sector (public or private) such that the top public sector values included accountability, effectiveness, incorruptibility, and reliability whereas the top private sector values included profitability, accountability, expertise, and reliability (Van Der Wal, 2008). The greater presence of food allergy policies in public CUs appears to align with the top four organizational values of public organizations – policies represent an effective, non-prejudiced (incorruptible), and reliable approach to accommodating students with special dietary needs (Van Der Wal, 2008).

Analysis of population proportions also revealed contract managed foodservice operations had statistically greater presence of formalized food allergy accommodation policies

than self-operated foodservices ( $Z = 2.32, p = .010$ ). Foodservice departments run by contract managed companies have the advantage of learned insights from foodservice professionals across institutions to inform development of policies or provide access to policy templates that may be customized for individual operations. Harold, from a contract managed operation in a private institution, discussed the influence the contracted company had on the development of food allergy policies, and how corporate policy was amended for use at the CU department level:

I work for a management company, so they initiated our systems a year ago. As a management company, we do everything from nursing homes where they've been dealin' with allergens since the beginning of time as a dietary-type concern, all the way to [business corporations] where they don't understand the need for it. So, we have to make our general corporate policy somewhat flexible so that they can, we can make it fit, whichever model that we're overseeing. So, that's part of it.... So, we spent the better part of four months taking the systems they put in place and applying them to our operations.

#### Motivating Factors for Allergen Accommodations

Increased presence of formalized policies, in relation to years past, may be attributed to several factors. About half ( $n=6, 54.5\%$ ) of the interview participants reported institutional requirements for students to live on campus and purchase meal plan for a designated period of time (i.e. one or two years). Because the meal plan is required for those students, every effort is made to make accommodations instead of releasing students from the meal plan. Releasing students from meal plan requirement bears financial implications for the foodservice unit, therefore adequate justification may be needed for a release to be considered. Katy, from a public institution, stated:

To be released from an actual...dining facility, a required plan, they have to provide medical documentation that they are physically at risk by purchasing and eating on campus. So that is quite lengthy of a process.

In 2013, legal action was brought against Lesley University related to non-compliance with the Americans with Disabilities Act (ADA) due to insufficient accommodations for students with special dietary needs at a university requiring on campus students purchase meal plans (U.S. Department of Justice, 2013). The case set a legal precedent, marking the first time a CU and the Department of Justice settled an alleged violation of the ADA pertaining to special dietary accommodations (HSE Legal Currents, 2013). The details of the settlement had practical implications for CU foodservice professionals as it outlined ways in which compliance with ADA may be ensured (HSE Legal Currents, 2013). Participants appeared to have heightened awareness of food allergy accommodations and compliance with the ADA. An interview participant, Betty, from a private institution said:

Because of the Lesley case, we now have forms that students have to fill out if they're request different housing accommodations or getting off the meal plan.

Foodservice professionals are recognizing food allergies may be considered a disability requiring accommodations under the ADA, and are therefore inciting involvement of relevant university departments in the process. Though departments such as Residence Life, Admissions, and Health Services may be involved in accommodating students with food allergies, interview participants discussed their collaborative efforts with Disabilities Services most frequently. Six foodservice professionals described how students must first register with the Disabilities Office before any accommodations are provided by the foodservice department. Dina, from a public institution, explained:

If the students register with the disability center or the special accommodation, then we talk with them. They [disabilities center professionals] are the ones who actually gather the medical information to make the determination that we do need to make an accommodation.

Gail, from a public institution said:

We work very closely with Disability Services... they are involved when a student files a 504 plan based on a food allergy. We work with Disability Services to make sure that we're doing what the ADA says we should be doing.

This research supports the notion that the Lesley University Settlement may have heightened the awareness of potential legal action against CUs by not providing reasonable accommodations to students with special dietary needs (Grasgreen, 2013). Judy, from a private institution, illustrated this point when she said:

I think it is very important to have administrative support from the top down, understanding how important it is from a responsible, ethical, legal point of view, and the Lesley ruling was very good for impressing that upon people all the way up.

#### Accommodation Policies and Procedures

Researchers have suggested CU foodservice operations may accommodate students with food allergies inconsistently in comparison to other foodservice operations due to the lack of formalized policies (Rajagopal & Strohbehn, 2011). A high percentage of participants from this study reported formalized food allergy policies, however the content of the policies varied greatly. Among the 55 institutions with department level food allergy accommodation policies represented in questionnaire phase (Table 4.4), the most common elements included in the policies were: 1) training for staff (n=53), 2) involvement of dietitian or nutritionist (n=47), and 3) contact person for food allergy accommodation inquiries (n=45).



### Medical documentation requirements

Medical documentation requirements included in departmental food allergy policies was reported by 32 (58.2%) participants. Five interview participants who reported formal food allergy policies at their respective institutions said medical documentation was collected from students requesting accommodations. Varying degrees of leniency with collecting medical documentation was noted among these five participants. For example, Ivy, from a public institution, described the detailed documentation students must submit to the disabilities office when requesting accommodations:

We [foodservice] do *not* take the medical documentation. I know that there's a letter from the doctor describing what happens to the person [when allergens ingested]. There's the test results showing proof that the person is allergy, food allergic... Because sometimes they just bring a letter that says, "This person needs to not be around... catfish. And that's not adequate. It has to be detailed."

Gail (from a public institution) reported request for medical documentation is a standard procedure, however leniency with fulfillment of the request is allowed – especially depending on the food allergy:

We do ask for medical documentation, but I don't always follow up with it because if somebody tells me they have a peanut or tree nut allergy, I'm going to believe them.

Varying procedures related to submission of medical documentation existed among institutions without food allergy policies as well. There appeared to be a continuum from no documentation requirement at all to highly specified documentation requirement. When asked whether students are required to submit medical documentation, Judy (from a private institution) said:

No, we're pretty lenient... We're trying to balance taking a scientific or a legal point of view with a holistic we-want-to-take-care-of-the-student point of view

Contrarily, two interview participants reported accommodations are contingent upon students providing medical documentation. Katy (from a public institution) described procedures followed at her institution:

If [students] actually have a medical condition or they claim to have a medical condition associated with food, we require an actual medical documentation from a long-term medical doctor that has been providing care for more than four months... So if someone came to me and told me they had celiac disease and they were just diagnosed, then I would have to have the documentation proving that before we moved forward.

Among these cases, participants from private institutions discussed greater degrees of leniency whereas participants from public institutions discussed more specific and deliberate procedures when asked about medical documentation.

### Training

Questionnaire participants were asked whether training was provided for them, non-student employees, and student employees. The majority of questionnaire participants (n=72, 94.7%) reported employees received training related to food allergy accommodations. Cross contact prevention training was most frequently reported for foodservice professionals (n=57, 75%), non-student employees (n=65, 85.5%), and student employees (n=47, 60.5%). Training employees about food substitutions based on allergies was the least reported training topic for foodservice professionals (n=49, 52.6%), non-student employees (n=48, 63.2%), and student employees (n=20, 26.3%).

All interview participants (n=11) reported some type of food allergy training was provided to foodservice employees, regardless of whether formal food allergy policies were in place at their institutions. Participants reported food allergy training was provided to employees upon hire, and annually, or twice per year. Training content described by interview participants can be categorized in two ways 1) general food allergy knowledge, and 2) operation-specific procedures related to accommodations. Approaches for general food allergy knowledge training varied. For example, three interview participants noted foodservice employees on their campuses were ServSafe® certified, one of which reported employees had completed ServSafe Allergens™ training. One participant reported a third-party allergy training service, AllerTrain, was used to train management and administrative staff about food allergies. Three interview participants were responsible for administering training at their operations.

A study examining food allergy training among child nutrition professionals in U.S. schools found food allergy training was provided in only 41.2% (140/340) schools represented (Lee, Kwon, Sauer, 2013). The primary barrier to providing training was time constraint. A key difference between K-12 and CU foodservice environments is type of employment. Child nutrition employees are often part time, working only during breakfast and lunch hours on days when school is in session. In the CU environment, there may be more full time staff preparing meals for operations serving meals continuously throughout the day. These employees may work year round, even when school is not in session. Therefore time constraints may not have as great impact in the CU environment. Three CU foodservice professionals reported school breaks were used as opportunities to provide food allergy training. Harold (from a private institution) said:

And it's done annually every summer when we have time to get everybody together to do it.

### Protection from liability

The least common item included in both departmental level and institutional level policies was the requirement for students to sign a release of liability waiver (n=6). None of the eleven interview participants discussed a release of liability waiver; however, it appeared CU professionals were aware of potential liability issues associated with serving students with food allergies. Three interview participants reported efforts to provide protection from liabilities related to risk of food allergic reactions from food eaten on campus. Interview participants reported disclaimers were posted on website and re-iterated personally by foodservice staff to ensure students understand risks involved with dining on campus. Carla, from a public institution, noted:

We do put out disclaimers that... foods do have some form of cross-contamination.

Emma, from a private institution, said:

Ultimately [the students] are responsible for the food they consume.

Among the 25 questionnaire respondents who reported institution level food allergy policies, the most common elements included were 1) required documentation of disability related to food allergy (n=22), 2) multiple departments' coordination for accommodation (n=19), and 3) contact person for accommodation inquiries (n=19). These findings are logical because when a food allergy accommodation program requires the coordination of professionals across the CU, an institutional level policy may help define roles and responsibilities of involved personnel. Three interview participants reported working closely with their respective Disabilities Services professionals, though the extent of the interaction varied greatly. For example, at one CU in the Southern region, the extent of their involvement is routing of students to the foodservice professional in charge of accommodations:

[Students] would go to the Disability...Center and say, 'I have this problem,' and then they would send them to us.

At another CU, Disabilities Services professionals are responsible for registering students; that is, they would collect documentation and make the determination whether accommodations were warranted. Ivy, from a public institution, said:

The Disabilities... Center... What happens is they are the ones who actually gather all the medical information to make the determination that we do need to make an accommodation.

Interview participants reported involvement of CU Health Services departments (n=3), predominantly related to prevention of adverse reactions on campus. Involvement of the CU Admissions professionals were reported (n=3), though their involvement was predominantly to route self-identified students to the appropriate contact person. Residential Services and Student Life professionals were also reported to have involvement in accommodating students with food allergies (n=6) by helping identify students who may need special housing accommodations related to their food allergies.

#### Accommodation Practices by Demographics

Pooled sample t-tests were used to determine whether food allergy accommodation practices differed by institution type (public or private) and foodservice management type (contract managed or self-operated). Food allergy accommodation practice scores were computed; this was the sum of accommodation practices reported in the departmental food allergy policy (11 questionnaire items depicted in Table 4.4) and operational aspects (5 questionnaire items depicted in Table 4.5). Therefore, the maximum practice score was 16. The mean accommodation practice score for public institutions was 8.89 (SD=2.79), and for private institutions was 9.2 (SD=2.79). There was no statistically significant difference ( $p=.365$ ) in

mean practice scores for private and public institutions. The mean accommodation practice score for contract managed foodservice operations ( $n=12$ ) was 8.25 ( $SD=2.2$ ) and 9.2 ( $SD=2.9$ ) for self-operated foodservice operations. There was no significant difference ( $p=.151$ ) in practice scores between contract-managed and self-operated foodservice operations.

#### Accommodation Efforts in the Absence of Policy

Of the 19 questionnaire participants who reported no policy at the department level, 10 (52.6%) indicated they were in the process of developing formal policies. Of the 49 participants who reported no policy at the institutional level, five (10.2%) indicated they were in the process of developing formal policies to put in place. A total of fourteen questionnaire participants reported no policies at both the institutional and departmental levels. Table 4.6 illustrates ways in which students with food allergies are accommodated at CUs without published policies. Most commonly, students at these institutions meet with the dining services dietitian, and the dietitian develops list of acceptable items ( $n=11$ ); and students are advised to check with foodservice staff each time before eating ( $n=10$ ).

Five interview participants reported no formal food allergy policy in place at their respective institutions. Despite the absence of policy, participants reported informal procedures were in place to accommodate students. At these institutions, menus were used as an informative tool enabling students with food allergies to self-select appropriate menu items. For example, Carla (from a public institution) indicated:

... working on going through all of the menus, and then identifying all of the allergens and trying to post those during regular service hours so that the students can identify if they can eat the food or not.

Other institutions had more extensive accommodation efforts in place in the absence of formalized policies. For example, Betty (from a private institution) reported a food allergy friendly station was available to students at lunch and dinner:

...it's an allergen-free station...so students with food allergies can go to that station and it's a chef-attended station. And they can easily put together like a protein, a starch and a vegetable at every meal, except for breakfast.

## CONCLUSIONS AND FUTURE RESEARCH

The purpose of this mixed methods study was to examine formal food allergy accommodation policies and to determine whether certain demographic characteristics (e.g. institution type, foodservice management type) impacted food allergy policies and practices. From questionnaires, it was revealed many CUs had published policies in place at the departmental level (74%), and/or at the institutional level (34%), however variation in policy content and the approach to accommodation existed.

The majority of CUs with institutional policies included multiple departments' coordination of accommodation efforts (76%). As gleaned from interviews, interdepartmental coordination efforts were most common between foodservice professionals and Disabilities Services. This may be a direct result of the 2013 litigation against Lesley University which heightened awareness for potential liability issues related to students with food allergies. Future research could further explore CU foodservice professionals' knowledge of the Lesley settlement and how it impacted attitudes and practices toward food allergy accommodations.

Considerable attention has been paid to food allergy accommodation in the K-12 school environment previously, and the *Voluntary Guidelines for Managing Food Allergies in Schools and Early Care and Education Program* were released in 2013 by the Centers for Disease

Control and Prevention (CDC, 2013). The *Voluntary Guidelines* is a comprehensive guide providing procedural and policy recommendations for reducing the risk of food allergic reactions in the school environment. Though no such equivalent has been federally released targeting the CU environment, the guidelines have practical applications for CU foodservice professionals accommodating students with food allergies. CU foodservice operations might benefit from the development of a food allergy policy template that can be tailored to individual CU operations as indicated by interviews with professionals working in contract managed operations. Once developed, empirical research can be used to evaluate the effectiveness of the implemented policies based on the template.

Questionnaire data did not reveal any significant differences in practice scores based on the examined variables, however, the interview data showed differences in individual accommodation practices between institutions. There is continued investigation to determine whether organizational culture may be useful as a theoretical framework to investigate differences in accommodation practices and policies. Findings from this line of inquiry will be reported elsewhere. However, additional research may explore other explanations for variation in accommodation practice scores.

This study examined whether differences in policies could be explained by two particular demographic variables including institution type and foodservice operation type. Future research may further explore variables associated with the presence of formalized accommodation policies such as history of adverse reactions to food eaten on campus as these experiences may impact CU professionals' attitudes toward food allergies and accommodations.

There were limitations to this study, one of which was the low questionnaire response rate (22.2%). Even though at least one foodservice professional from each qualifying (i.e. four-



year) NACUFS member school was invited to participate in the study, non-response bias may be inherent such that only those who had either implemented food allergy accommodation programs or had an interest in the topic participated. However, the data revealed a participants reporting a wide range of food allergy accommodation efforts (e.g. minimal, undocumented accommodations to complex formalized policies). Given the small sample size, study findings may not be generalizable to all four-year institutions. However, the mixed methods design provided opportunity for greater depth of understanding for food allergy accommodations in CUs.

Future studies examining food allergy accommodations may use a similar, mixed methods approach. An explanatory design enables researchers to capitalize on advantages of both quantitative and qualitative approaches. For example, summative assessments of accommodation practices, hypothesis testing, and generalizable results can be achieved with quantitative methods while descriptive, explanatory production of knowledge may be achieved using qualitative methods.

**Table 4.1** Questionnaire Participants' Demographics (n=76)

Category	Frequency (n)	Percent (%)
Age		
Less than 40 years old	22	28.9
41-50 years old	23	30.3
51-60 years old	24	31.6
Over 60 years old	7	9.2
Gender		
Female	46	60.5
Male	30	39.5
Highest Level of Education		
High school	5	6.6
Associates or culinary degree	8	10.5
Bachelor's degree	38	50.0
Master's degree	22	29.0
Doctorate	2	2.6
Non response	1	1.3
Time Worked in College or University Foodservice		
0-10 years	35	46.0
11-20 years	17	22.4
21-30 years	14	18.4
Over 30 years	10	13.2
Time Worked in Current Operation		
Less than 1 year	3	3.9
1-3 years	25	32.9
4-7 years	16	21.1
8-12 years	13	17.1
13-20 years	7	9.2
Over 20 years	12	15.8
Have Taken Food Safety Course <sup>a</sup>	67	88.1
Have Registered Dietitian Credentials <sup>a</sup>	31	40.8

Note: <sup>a</sup> Yes responses

**Table 4.2** Questionnaire Participants' Departmental and Institutional Characteristics (n=76)

Category	Frequency (n)	Percent (%) <sup>a</sup>
Foodservice Management Type		
Contract	14	18.4
Self-operated	62	81.5
Type of Institution		
Public	45	59.2
Private	30	39.5
Geographic Region		
Continental	7	9.6
Mid-Atlantic	5	6.8
Midwest	26	35.6
Northeast	7	9.6
Pacific	15	20.5
Southern	13	17.8
Student Enrollment Fall 2014		
Less than 1,000 students	5	6.6
1,001 to 5,000 students	16	21.1
5,001 to 10,000 students	12	15.8
10,001 to 20,000 students	12	15.8
20,001 to 30,000 students	11	14.5
30,001 to 50,000 students	18	23.7
More than 50,000 students	1	1.3
Time accommodating students with food allergies		
Less than one year	2	2.8
1-3 years	7	9.7
4-7 years	23	31.9
8-12 years	22	30.6
13-20 years	10	13.9
More than 20 years	8	11.1

**Table 4.3** Interview Participants' Personal, Departmental, and Institutional Characteristics  
(N=10-11)

Characteristic	Frequency ( <i>n</i> )
Job Title	
Registered Dietitian or Nutritionist	7
Foodservice Manager or Director	3
Marketing Manager	1
Management Type of Operation	
Contract	2
Self-operated	8
Type of Institution	
Public	7
Private	4
NACUFS Geographic Region	
Continental	1
Mid-Atlantic	1
Midwest	2
Northeast	2
Pacific	2
Southern	3
Student Enrollment Fall 2014	
1,001 to 5,000 students	3
5,001 to 10,000 students	1
10,001 to 20,000 students	1
20,001 to 30,000 students	2
30,001 to 50,000 students	4

**Table 4.4** Questionnaire Results: Food Allergy Accommodation Policy Content

Category	Institution (%) <sup>a</sup>	Department (%) <sup>a</sup>
Training or professional development for foodservice staff related to food allergies	4(16.0)	53(96.4)
Involvement of dietitian or person with nutrition training	11(44.0)	47(85.5)
Contact person for food allergy accommodation inquiries	18(72.0)	45(81.8)
Outline of qualifications and eligibility criteria	11(44.0)	37(67.3)
Person responsible for ordering allergen-free products	6(24.0)	37(67.3)
Required medical documentation of food allergy	16(64.0)	32(58.2)
Required development of emergency action plans	15(60.0)	28(50.9)
Outlined evaluation of quality of food allergy accommodation efforts	5(20.0)	26(47.3)
Required multiple departments' coordination of accommodation efforts	19(76.0)	22(40)
Required documentation of disability due to life-threatening food allergy	22(88.0)	21(38.2)
Required students to sign a release of liability waiver	6(24.0)	6(10.9)

<sup>a</sup> Percentages based on the number of respondents reporting policies in place at the indicated level: n=25 at institutional level, n=55 at departmental level

**Table 4.5** Questionnaire Results: Operational Aspects Available to Food Allergic Students

Category	Frequency (%)
Menus designated with major allergens (n = 73)	53 (72.6)
Designated allergen-safe food production area (n=72)	40 (55.6)
Designated allergen-safe food storage area (n=71)	36 (50.7)
Designated allergy-friendly dining area (n=72)	10 (13.9)
Access to ingredient lists for all menu items offered (n=73)	63 (86.3)

**Table 4.6** Questionnaire Results: Actions Students are Advised to Take in Absence of Policy (n=14)

Category	Frequency n
No advice given	0
Check with dining hall/foodservice unit manager each time before eating	10
Meet with dining services dietitian at the beginning of the term to explain allergy; dietitian will develop list of acceptable items	11
Verbally inform foodservice staff of specific dietary needs at the beginning of term; no further action taken by the foodservice department	4
Sign a disclaimer document that relieves the institution from legal liability in case the student suffers a mild or severe allergic reaction	1
Other action taken (e.g. register with disabilities office)	5

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**CHAPTER 5: COLLEGE AND UNIVERSITY FOODSERVICE PROFESSIONALS’  
PERCEPTIONS OF DEPARTMENTAL CULTURE IN RELATIONSHIP TO FOOD  
ALLERGY ACCOMMODATIONS EFFORTS**

A paper to be submitted to the *International Journal of Contemporary Hospitality Management*

Kelly Abdelmassih, Susan W. Arendt, and Lakshman Rajagopal

**ABSTRACT**

**Purpose** - The purpose of this study was to 1) examine organizational culture of college and university foodservice operations using the competing values framework and 2) investigate the relationship between organizational culture and food allergy accommodation efforts.

**Design/Methodology/Approach** - Web-administered questionnaires were used to investigate cultures as perceived by foodservice professionals who were members of the National Association for College and University Food Services. Descriptive statistics and ANOVA were used to analyze questionnaire data. Following questionnaire data analysis, follow-up interviews were conducted with a subsample of the questionnaire population to gain a more in-depth understanding of questionnaire results.

**Findings** - Clan culture, emphasizing personal relationships, family-like connections, and collaboration among members, as well as hierarchy culture, emphasizing stability, control, and efficiency, were the predominant departmental culture types among questionnaire and interview participants. Statistical evidence did not support differences in food allergy accommodation practices and policies based on culture type; however, qualitative findings suggest culture may impact accommodations for students with food allergies.

**Practical/Social Implications:** Understanding organizational culture, at both the departmental and institutional levels, can provide an explanation for the variation in approaches to complex

challenges, such as food allergy accommodations in colleges and universities. Once the culture is addressed, solutions aligning with cultures can be implemented effectively.

Originality/value - Culture studies in the foodservice context are rare. This is the first known study to assess foodservice culture in higher education. The use of a sequential explanatory mixed methods design enabled an in-depth exploration of questionnaire results which would have not otherwise been achieved.

Keywords: Organizational Culture Assessment Instrument, organizational culture, food allergy, foodservice, higher education, college dining

Paper type: Research Paper

#### ACKNOWLEDGMENT

This study was funded, in part, through a research grant from the Food Service Systems Management Education Council, 2014.

#### INTRODUCTION

Organizational culture, coined a key ingredient of organizations' success (Cameron & Quinn, 2011), drives the way things are done within organizations. An organization's culture is comprised of the norms, values, assumptions, and beliefs organization members share and pass on to new members. Scholars have studied the impact of organizational culture on hospitality industries suggesting professionals tend to their organization's culture to enhance aspects of customer service (Ford & Sturman, 2011).

Foodservice operations, representing one segment of the hospitality industry, are constantly evolving to meet changing consumer needs. For example, the increase of Americans with diagnosed food allergies has implications for both commercial (e.g. restaurants) and non-commercial (e.g. college and university foodservices) foodservice operations. Providing safe

food to consumers with food allergies requires innovation and attention to customer service on the part of the organization.

This study examines how organizational culture may play a role in the accommodation of consumers with food allergies in non-commercial foodservice operations, specifically college and university (CU) environments.

The specific objectives of this study were to:

1. Identify prominent organizational culture types among CU foodservice operations.
2. Explore CU foodservice directors' conceptualization of culture within the operation.
3. Examine impact of the culture of CU foodservice operations on food allergy accommodation practices.
4. Determine whether the culture of CU foodservice operations has a relationship with the presence of food allergy accommodation policies.
5. Determine if certain organizational culture types correlate with aspects of food allergy accommodation practices (e.g. operational aspects, training).

## LITERATURE REVIEW

The term 'organizational culture' is rooted in sociological and anthropological perspectives, referring to values, underlying assumptions, and expectations that govern the way things are done within an organization (Cameron & Quinn, 2011, p. 18). A prominent conceptualization of organizational culture is that it exists at three levels: 1) artifacts (observable level); 2) values and 3) basic assumptions (inferential levels). Organizational culture can be measured using direct observation of artifacts and behaviors which serve as the basis for inferences of organizational members' underlying values and assumptions (Bess & Dee, 2008, pp. 358-399).

Organizational culture impacts the way in which organizations function – including how policies and procedures are developed and implemented. The culture of an organization governs the way things are done within that organization; without properly addressing the culture, it is difficult to initiate change. Strong and consistent cultures foster a more favorable environment for creating change than weak and contradictory cultures (Tierney, 1999). Research has shown a frequently cited reason for failed initiatives within an organization (e.g. total quality management, strategic planning, and organizational change initiatives) is disregard for the organization's culture (Goss, Pascale, & Athos, 1993; Green, 2012).

#### Competing Values Framework

The competing values framework is a well-established perspective from which organizational culture may be studied. The competing values framework has been described as “a model that defines organizations and the leaders running them according to four styles, the four quadrants of a table bounded by the extremes of two axes: flexibility and discretion versus stability and control; and internal focus/integration versus external focus/differentiation” (Garman, 2006).

Each of the four quadrants represent culture types of clan, hierarchy, market, and adhocracy cultures. Each culture types is composed of distinct characteristics. Clan culture is characterized by an internal focus with high commitment to the organization, high regard for the development of human resources, emphasis on teamwork and participation, and friendliness similar to that of family atmosphere (Cameron & Quinn, 2011). Clan culture organizations feature friendly environments in which members (employees) share openly about themselves; the leadership teams are regarded as mentors, or parent figures in the family analogy; and the long term impact is loyalty among members and establishment of traditions.

Hierarchy culture organizations have an internal focus; they embody the classic bureaucratic attributes emphasizing stability and consistency. Hierarchy culture is characterized by formal hierarchical organizational structures, high regard for efficiency; policy and procedure; and long-term concern with stability and performance of the organization (Cameron & Quinn, 2011). Market culture has an external focus, with attention paid to external factors impacting the organization including suppliers, customers, contractors, and competitors. Market culture is characterized by result-oriented mindsets; competitiveness; high regard for reputation of success; and a long-term concern with market share and competitive pricing (Cameron & Quinn, 2011). Adhocracy culture has an external focus and creative orientation emphasizing flexibility and discretion. This culture type is characterized by dynamic, innovative and creative environments; willingness to take risks for greater rewards; and long-term concern with growth and offering of new products and services (Cameron & Quinn, 2011, pp. 49-51).

#### Organizational Culture in Colleges and Universities

Colleges and universities (CUs) are complex organizations that are constantly evolving as environmental, structural, and cultural challenges are confronted. Tierney (1999) discussed the importance of organizational culture in creating a higher education institution responsive to the needs of its employees (i.e. faculty and staff) and customers (i.e. students). Organizational culture should be used as a compass guiding organizational action, otherwise change is increasingly difficult to initiate (Tierney, 1999,).

Organizational action, however, requires consensus among organizational members regarding the current culture as well as preferred future culture (Cameron & Quinn, 2011, pp. 102-105). Research has shown discrepancy between higher education staff members' perceived and preferred organizational culture within academic departments (Kleijnen et al., 2009).

Kleijnen et al. (2009) suggested academic departments embody clan culture characteristics including human relations values, development of human relations, flexibility, innovation, and growth.

Within an industry sector, for example CUs, organizational culture may vary based on organization type. Research has also shown faculty members' perceptions of organizational culture may differ based on institutional type, public or private (Ramachandran, Chong, & Ismail, 2011). Using the a validated instrument called the Organizational Culture Assessment Instrument (OCAI), organizational culture scores for public Malaysian institutions were more pronounced than for private Malaysian institutions: clan culture was most prevalent among respondents from public institutions followed by hierarchy culture. The prevalence of clan culture within public institutions implied a collaborative culture in which faculty work together to complete tasks such as research and other scholarly activities (Ramachandran et al., 2011). In the same study, faculty from private institutions rated hierarchical and market cultures higher than adhocracy and clan cultures; authors suggested emphasis of market culture in private institutions was perpetuated by the need to recruit students and attend to other activities that generated income for this type of institution (Ramachandran et al., 2011). Hierarchical cultures were prominent in both public and private institutions, albeit to varying degrees; this may be because emphasis is placed on rules, procedures and stability in higher education institutions.

#### Organizational Culture in the Hospitality Industry

Scholars have investigated the impact of organizational culture on various aspects of the service industry, specifically hospitality industry. For example, research has investigated the effect of leadership competency and organizational culture on Malaysian hotel firms' responsiveness to customers and employees and financial performance of the firms (Asree, Zain,

& Razalli, 2010). Organizational culture, in addition to leadership competency, positively impacted the organizations' responsiveness to customers and employees, which could potentially increase hotel revenue. Financial success of service-oriented organizations is dependent not only on structural aspects; it also depends on soft or infrastructural aspects such as organizational culture (Asree et al., 2010).

Different approaches have been employed to investigate organizational culture. Dawson, Abbott, and Shoemaker (2011) developed a culture scale specific to the hospitality industry, taking into account both organizational culture and personal attributes of those employed within the industry and found the key to employee retention and success was ensuring personal attributes are in alignment with the organizational culture of the hospitality industry.

Koutroumanis and Alexakis (2009) reviewed published research on organizational culture in the foodservice industry to make recommendations for cultural development among restaurant leaders. It was suggested development of clan culture may be beneficial for foodservice organizations. The literature revealed foodservice organizations with clan culture experience less employee turnover, greater productivity, and higher levels of service which may ultimately impact customer satisfaction, increase repeat patronage and ultimately increase profits (Koutroumanis & Alexakis, 2009).

This literature review (Koutroumanis & Alexakis, 2009) suggests clan culture is beneficial for commercial foodservice operations. Beneficial aspects of clan culture (e.g. higher level of service) may be extended to non-commercial foodservice operations, though additional research is needed to examine this notion.

Food Allergy Accommodations in Colleges and Universities



Food allergies are a potentially life-threatening health concern that affect about 15 million Americans (Food Allergy Research and Education [FARE], 2013). Food allergy rates in the American child and adolescent population appear to have increased over time (Branum & Lukacs, 2008) such that an estimated one in 13 children live with food allergies (FARE, 2013). Symptoms of food allergic reactions range from mild (e.g. itching, sneezing) to severe (e.g. anaphylaxis-induced death) (FARE, 2013).

American expenditures on eating food away from home have increased since 1970 with a record high of 43.1% total household expenditures on food away from home noted in 2012 (Economic Research Service, 2012). Commercial foodservice operations' (e.g. restaurants) shortcomings of providing safe away from home food for individuals with food allergies are well documented in the literature (Kwon & Lee, 2012; Knoblaugh, 2009; Leitch, Walker, & Davey, 2005). Non-commercial operations, such as CU foodservice operations, face unique challenges in handling food allergies due to the complexity of their operations. Foodservice venues in higher education settings vary, including traditional dining settings, catering, vending, snack kiosks, and convenience stores (Gregoire, 2012).

Students, the customers, live on campus in residence halls rely on university dining centers for a large proportion of their meals. Consumers with food allergies may be protected by the Americans with Disabilities Act therefore adverse reactions to food on campus can be a legal liability for the institution (Elan, 2006). Foodservice directors indicate accommodating students with food allergy in the CU setting is challenging given the constantly changing demands of students and potential liability issues attached to an allergic reaction caused by food eaten on campus (Elan, 2006). As highlighted by a recent settlement between Lesley University and the U.S. Department of Justice, food allergies may be considered a disability under the Americans

with Disabilities Act of 1990 as amended in 2008 (U.S. Department of Justice, 2013). Therefore, reasonable accommodations for students with food allergies may be provided to ensure compliance with the ADA.

In a recent study, foodservice directors (58 of 95) reported known incidences of severe food allergic reactions during employment at their current institution, however CUs and CU foodservice departments lacked formal food allergy accommodation policies (Rajagopal & Strohbehn, 2011). In order to assess current policies at the foodservice department level, underlying organizational perspectives that drive policies must be understood. Therefore, this research examined foodservice professionals' perceptions of organizational culture in their foodservice departments and how it impacted food allergy accommodation policies and procedures.

#### Purpose Statement and Hypotheses

This research employed a sequential explanatory mixed methods design to examine foodservice professionals' perceived organizational culture within CU foodservice operations and the association between culture and food allergy accommodation efforts. Specific hypotheses tested included:

H<sub>1</sub>: Clan culture will be the predominant organizational culture type in CU foodservice departments.

H<sub>2</sub>: Food allergy accommodation practices differ based on the culture type of the CU foodservice operations.

H<sub>3</sub>: Comprehensiveness of food allergy accommodation policies differ based on the culture type of the CU foodservice operations.

## METHODS

A two-phase sequential explanatory mixed methods design was used to address the research objectives. Quantitative (i.e. questionnaire) and qualitative (i.e. interviews) methods were employed consecutively such that the quantitative phase informed the qualitative phase (Nastasi, Hitchcock, & Brown, 2010). Methods specific to each of the two phases are described below.

### Questionnaire Phase

A web questionnaire was developed, pilot tested, and electronically distributed to foodservice professionals using Qualtrics<sup>®</sup> - a web-based survey distribution software. The questionnaire included three sections: demographic, food allergy accommodations, and organizational culture. At the close of the web-based questionnaire, participants were asked to volunteer for the interview phase. The food allergy accommodation section included items related to specific policies and practices in place at the foodservice professionals' institutions. Permission to include questionnaire items adapted from previous research (Rajagopal & Strohbehn, 2011) was obtained prior to inclusion.

The OCAI, an instrument developed, and validated, to measure organizational culture within the competing values framework was used in this study (Cameron & Quinn, 2011). Permission was obtained to utilize the OCAI developed by Cameron & Quinn (2006). The OCAI was modified to assess perceived organizational culture at the foodservice department level as opposed to the institutional level. The instrument assesses six dimensions of organizational culture: dominant characteristics, organizational leadership, management of employees, organizational glue, strategic emphasis and criteria of success (Cameron & Quinn, 2006). For each dimension, respondents rated four alternatives using an ipsative scale. Each of

the four alternatives corresponded to a culture type; the means of the four alternatives were used to determine the most prominent culture types. The questionnaire was pilot tested by five experts and six CU foodservice professionals. Revisions to improve readability and facilitate online administration of the questionnaire were made based on responses.

Participants were recruited from the 2014 National Association of College and University Food Services (NACUFS) membership directory. This Association is comprised of CU foodservice professionals representing both self-operated and contract managed operations; one representative from each four-year, U.S. institution listed in the directory was selected (n=359). Foodservice professionals were contacted by e-mail and asked to forward the invitation to the person within their department most knowledgeable about food allergy accommodation efforts. Due to firewalls or invalid e-mail addresses, the invitation e-mail reached 342 foodservice professionals. The invitation e-mail contained a link to the Qualtrics<sup>®</sup>-hosted questionnaire. Participants were eligible for a drawing to win a gift card as an incentive for participation. Distribution of the questionnaire and reminders followed guidelines set forth by Dillman, Smyth, and Christian (2009).

Data gathered from the questionnaire phase were downloaded from Qualtrics<sup>®</sup> and transferred to *SPSS 22.0* for analysis. Descriptive statistics, including analysis of distributions, central tendencies, and dispersion of data were computed. Analysis of the OCAI scores were used to determine prominent organizational culture type (i.e. hierarchical, clan, adhocracy, or market). This determination was used to test hypotheses  $H_1$ . ANOVA was employed to test  $H_2$  and  $H_3$ .

Practice scores, examined when  $H_2$  was tested, were sums of questionnaire items about operational practices and departmental policy components; the maximum practice score for each

case was 16. Additionally, policy comprehensiveness scores were computed to address H<sub>3</sub>; comprehensiveness scores were sums of items included in departmental level policy, and the maximum score possible for each case was 11. Practice scores and policy comprehensiveness scores were computed for questionnaires of participants who reported policies were in place at the departmental level. Differences in mean practice scores and policy comprehensiveness scores for cases with only institutional level policies (n=25) or no policies at any level (n=14) were not tested due to inability to achieve statistical power related to small sample sizes.

#### Interview Phase

One-on-one telephone interviews were conducted to provide deeper exploration of perceived culture of foodservice operations, food allergy accommodations practices and policies, as well as the potential interplay with organizational culture of CU foodservice operations. A purposeful convenience sampling technique yielded eleven volunteers representing all six NACUFS regions. Interviews were conducted by telephone, and were audio recorded for transcription and analysis purposes.

An interview guide with questions was developed based on questionnaire results. Definitions were provided for culture types when these were discussed. Utilizing an interview guide helped maintain consistency between interviews, and facilitate efficient analyses (Krueger, 1998). The questions were open ended to encourage participants to express themselves as opposed to confining responses to one or two words. Follow up questions were asked during the interviews to help elicit more in-depth responses, clarifications and examples from participants as suggested by Rossman and Rallis (2012).

Transcripts were independently coded by three researchers. The researchers agreed upon codes and themes. Member checking was done to ensure trustworthiness of data (Creswell &

Clark, 2007). This entailed sending the interview transcripts to participants who were asked whether the interview accurately depicted their experiences. Ten foodservice professionals participated in the member checking process and, indicated the transcripts accurately depicted their conversations with the researcher.

## FINDINGS AND DISCUSSION

### Participant and Institutional Characteristics

Of the 342 delivered e-mail invitations, 81 questionnaire responses (22.6%) were obtained, however 5 were deemed unusable due to attrition with less than half the questionnaire completed. In total, 76 questionnaires (22.2% response) were included in analyses. Another study investigating CU foodservice directors' perceptions on food allergy policies and procedures also achieved a marginally lower response rate of 16.2% (Rajagopal & Strohbehn, 2011). Characteristics of the institutions and foodservice departments of research participants are depicted in Table 5.1. The majority of questionnaire participants worked in foodservice operations which were self-operated ( $n = 62$ , 76%), and in public institutions ( $n = 45$ , 59.2%). Twenty-six participants (35.6%) were located in the Midwest region. Most participants were female ( $n = 46$ , 60.5%), held at least a bachelor's degree ( $n = 62$ , 81.5%), had worked ten years or less in CU foodservice operations ( $n = 35$ , 46%), and had taken a food safety course ( $n = 67$ , 88.1%). The most common length of tenure at the current operation was 1 - 3 years ( $n = 25$ , 32.9%) followed by 4 - 7 years ( $n = 16$ , 21.1%).

Forty-one questionnaire participants indicated interest in the follow up interviews. The purposeful convenience sampling technique yielded eleven interview participants. Most participants ( $n = 10$ ) were female. Seven interview participants indicated their job title was dietitian, nutritionist, or nutritional coordinator whereas three were either managers or directors;

and one was a marketing director. One of the interview participants who was a director also reported having Registered Dietitian credentials.

### Hypotheses Testing

H<sub>1</sub>: Clan culture will be the predominant organizational culture type in CU foodservice departments.

Means and standard deviations for OCAI statements are provided in Table 5.2; overall means and standard deviations across all dimensions (by culture type) are provided in Table 5.3. One hundred points were distributed between four statements of each dimension according to participants' level of agreement. Therefore, the value assigned to each statements could potentially range anywhere from 0 (indicating no agreement) to 100 (complete agreement). For most dimensions, statements related to clan culture (A), and hierarchy culture (D) had the highest mean scores. For example, the highest mean scores for the dominant characteristics dimension were for the clan culture statement (34.25, SD 19.46) and the hierarchy culture statement (26.44, SD 16.63). The hierarchy statement had the highest mean rating (34.29, SD 16.95) for the organizational leadership dimension followed by the clan culture statement (29.86, SD 17.69). For each of the remaining four dimensions, clan and hierarchy culture statements had higher mean scores than adhocracy (B) and market (C) culture statements. Based on OCAI results, the most predominant culture type was clan culture (n=29, 41.4%), followed by hierarchy culture (n=23, 32.9%). Clan and hierarchy culture types were rated equally by four questionnaire participants (n=4, 5.7%). The least prominent culture types were market (7/70, 10%), and adhocracy (6/70, 8.6%). Research has shown CU academic departments embody characteristics of clan culture (Kleijnen et al., 2009). Though different subcultures can exist within an

organization, this study supports the fact clan culture characteristics are also prevalent within non-academic auxiliary student support services departments (e.g. CU foodservice department).

Table 5.4 depicts interview participants' descriptions of the culture of their foodservice departments. Participants perceived their foodservice department embodied the description of clan and hierarchy culture most often, and only one participant perceived adhocracy culture. Clan culture is characterized by concern for people, feelings of an extended family, and commitment to collaboration among members (Fralinger & Olson, 2007). Interview participants who perceived clan culture was predominant in their foodservice operations explained ways in which the culture of their departments embodied some of these characteristics. An interview participant explained the personal relationships between foodservice employees within the department:

A lot of our, our student employees are also very close to their direct supervisors as well...

Our staff are really personable and they do treat each other like an extended family. (Carla, public institution)

Another participant explained:

And when managing our employees, we are definitely not as structured in regards to that we kinda treat them more like family and there's pros and cons to that... family's one of our core values. It really is. And we live that as part of our mantra. (Hank, private institution)

Interview participants also discussed the personal, familial-type relationships foodservice employees develop with students as well. One participant discussed the role employees have in students' everyday lives:



So, I mean, I feel like...we're basically their family. We're cooking them dinner and your mom and dad usually cook them dinner so, we're kinda like their family and make them feel like they're at home... (Betty, private institution)

Another participant said:

...students are required to live on campus, and so we want it to feel as much like home as it can for them. (Fay, public institution)

Organizations with hierarchy cultures have an internal focus, and members value control and stability (Cameron & Quinn, 2006). Codes, including oversight and stability, emerged from the interview data. When asked to describe why an interview participant perceived his foodservice department to embody a hierarchy culture, he said:

...Our facility is run by policies and procedures...Our facility is tightly controlled by the university, so a lot of our policies and procedures come from them ... We have to get approval about everything that we do through the university. (Carla, public institution)

This statement alludes to the interplay between institutional culture and the subculture of the foodservice department. For the questionnaire, the OCAI was adapted to diagnose perceived culture types at only the departmental level. However, an advantage of using follow-up interviews was that researchers asked foodservice professionals about organizational culture at the institutional level as well. Given the notion subcultures may exist between different segments (or levels) of an organization, interview participants were asked to identify the culture type of their CUs at the institutional level. Market, clan, and hierarchy culture types were identified for their institution. Specifically, one interview participant reported market culture, four reported clan culture, and four reported hierarchy culture at the institutional levels.

Market cultures are driven by results and attainment of goals; organizations which embody market culture values competition and profitability (Cameron & Quinn, 2006). An interview participant from a contract managed foodservice operation explained why the perceived culture of his CU was market:

But the institution, as a whole, are definitely, my goal is set for the year was simply as,  
 “you’d better make as much money as you did last year. (Hank, private institution)

Research has linked market culture to financial effectiveness (Hartnell, Ou, & Kinicki 2011). This participants’ position on the CU organizational chart may have impacted perceived culture as he reported directly to the person in charge of finance. Orientation to market culture may be useful for goal attainment and financial accountability, likely components of the contractual agreement between the foodservice management company and the institution.

Hierarchy cultures are predominant among CU foodservice departments – albeit to varying degrees – likely due to emphases placed on rules, procedures and stability (Ramachandran et al., 2011). Stability and oversight emerged as codes when interview participants discussed their institutions’ orientation to hierarchy culture. For example, one participant noted the control measures (i.e. policies and procedures) her institution has in place that are, in turn, implemented at the departmental level.

Our facility is tightly controlled by the university, so a lot of our policies and procedures come from them. (Carla, public institution)

The predominant departmental cultures identified from the questionnaire data (hierarchy and clan) were mirrored by the subsample of interview participants. As illustrated, participants described organizational culture characteristics consistent with the culture types identified during the interviews.

H<sub>2</sub>: Food allergy accommodation practices differ based on the culture type of the CU foodservice operations.

Practice score means for each culture type were analyzed using ANOVA. This hypothesis was not supported ( $F [4, 45] = 1.142, p = .349$ ), indicating there was no significant difference between mean practice scores based on culture type. Though there is evidence differences exist between practice scores based on culture type, the H<sub>2</sub> cannot be proven given the small sample size coupled with the variability in the data.

H<sub>3</sub>: Comprehensiveness of food allergy accommodation policies differ based on the culture type of the CU foodservice operations.

Comprehensiveness of policies was assessed at the departmental level. The mean comprehensiveness score was 5.77 (SD = 2.62). The hypothesis was not supported ( $F [4, 47] = 1.213, p = .318$ ) indicating there was no significant difference between mean comprehensiveness scores based on culture type. Again, the level of variance in the data coupled with small sample sizes, researchers failed to detect significance in the sample likely due to low power.

#### Organizational Culture and Food Allergy Accommodations

Given the limitation of small questionnaire sample size related to H<sub>3</sub>, interview participants were asked whether they perceive organizational culture impacts the ways in which food allergy accommodations are handled at their CU. Interview participants outlined ways in which the culture of the department and/or institution impact the approach to accommodate students with food allergies. At the institutional level, policies and procedures that contribute to stability and control (i.e. hierarchy culture) are helpful when accommodating students:

I think with the culture being formal and precise and falling back on policies, I think that it gives us a strict direction on how to handle it... it's very much that formal hierarchy policy

system that we have in place, much like the overall facility. So I think we, we certainly mirror that as professionals. (Katy, public institution)

Clan culture characteristics at both the departmental and institutional levels are perceived to influence the way in which students with food allergies are accommodated. One participant discussed acceptance at the institutional level:

One of the big pushes of the university is diversity and being accepting of people... that moves its way into allergies too because it could be a stigma too if you have an allergy, and we want everybody to feel welcome here...I think the university helps...people feel more comfortable if they have something that's gonna make them stand out like that. (Emma, private institution)

Research suggests clan cultures in foodservice organizations may lead to a heightened level of customer responsiveness and service (Koutroumanis & Alexakis, 2009). This research supports the notion members of clan-oriented cultures may provide high levels of individualized service related to their orientation toward personal relationships. At the departmental level, a participant discussed how she encourages the development of personal relationships between staff and students:

~~~~ And then the fact that we, as a department, function more than the family, we bring these students in..., kinda tell them our story... I try and follow through that when the students come to see us, because this is often their first time away from their parents and they're trying to learn how to function as adults and be able to advocate for themselves. And that's the big thing is, I'm here to help them in any way, shape, or form that I can to make sure that their voice is heard and that they're understood. (Amy, public institutional)

## CONCLUSIONS AND IMPLICATIONS

The purpose of this study was to investigate prominent organizational cultures as perceived by CU foodservice professionals. In the context of food allergy accommodations, results suggest clan culture characteristics, including collaboration among organization members and family-like atmosphere, may lead to greater attention to detail and student-focused outcomes. Findings support previous research in the commercial foodservice sector concluding clan culture characteristics are beneficial for this service oriented industry (Koutroumanis & Alexakis, 2009).

Organizational culture was assessed from the viewpoint of only one individual per institution. Given perceptions of culture may differ by individuals within an organization, future research may organizational culture data from more than one person per institution. Additionally, the focus of this study was the impact of organizational culture on food allergy accommodation policies and procedures. Future studies may examine potential relationships between organizational culture and food allergy accommodation outcomes as perceived by students. Particularly, researchers may investigate whether student satisfaction with food allergy accommodations differ by organizational culture types.

This study employed a sequential explanatory mixed methods design which was useful in providing meaningful results. The limitation of small sample size for the questionnaire phase placed constraints on generalizable conclusions that could be drawn related to statistical analysis. However, the follow up interviews allowed researchers to gain a more descriptive, explanatory, understanding of the phase one results. The approach yielded more robust findings than if only questionnaires were used.

**Table 5.1** Departmental and Institutional Characteristics

| Characteristic                                                                  | Questionnaire: (N=76)     |                             | Interviews (N=10-11)      |                |
|---------------------------------------------------------------------------------|---------------------------|-----------------------------|---------------------------|----------------|
|                                                                                 | Frequency<br>( <i>n</i> ) | Percent<br>(%) <sup>a</sup> | Frequency<br>( <i>n</i> ) | Percent<br>(%) |
| Management Type of Operation                                                    |                           |                             |                           |                |
| Contract                                                                        | 14                        | 18.4                        | 2                         | 20.0           |
| Self-operated                                                                   | 62                        | 81.5                        | 8                         | 80.0           |
| Years institution has accommodated<br>students with food allergies <sup>b</sup> |                           |                             |                           |                |
| Less than one year                                                              | 2                         | 2.8                         | -                         | -              |
| 1-3 years                                                                       | 7                         | 9.7                         | -                         | -              |
| 4-7 years                                                                       | 23                        | 31.9                        | -                         | -              |
| 8-12 years                                                                      | 22                        | 30.6                        | -                         | -              |
| 13-20 years                                                                     | 10                        | 13.9                        | -                         | -              |
| More than 20 years                                                              | 8                         | 11.1                        | -                         | -              |
| Type of institution                                                             |                           |                             |                           |                |
| Public                                                                          | 45                        | 59.2                        | 7                         | 63.6           |
| Private                                                                         | 30                        | 39.5                        | 4                         | 36.4           |
| NACUFS Geographic Region                                                        |                           |                             |                           |                |
| Continental                                                                     | 7                         | 9.6                         | 1                         | 9.1            |
| Mid-Atlantic                                                                    | 5                         | 6.8                         | 1                         | 9.1            |
| Midwest                                                                         | 26                        | 35.6                        | 2                         | 18.2           |
| Northeast                                                                       | 7                         | 9.6                         | 2                         | 18.2           |
| Pacific                                                                         | 15                        | 20.5                        | 2                         | 18.2           |
| Southern                                                                        | 13                        | 17.8                        | 3                         | 27.3           |
| Student Enrollment Fall 2014                                                    |                           |                             |                           |                |
| Less than 1,000 students                                                        | 5                         | 6.6                         | 0                         | 0              |
| 1,001 to 5,000 students                                                         | 16                        | 21.1                        | 3                         | 27.3           |
| 5,001 to 10,000 students                                                        | 12                        | 15.8                        | 1                         | 9.1            |
| 10,001 to 20,000 students                                                       | 12                        | 15.8                        | 1                         | 9.1            |
| 20,001 to 30,000 students                                                       | 11                        | 14.5                        | 2                         | 18.2           |
| 30,001 to 50,000 students                                                       | 18                        | 23.7                        | 4                         | 36.4           |
| Over 50,000 students                                                            | 1                         | 1.3                         | 0                         | 0              |

<sup>a</sup>Percentages may not sum 100 due to item non-response

<sup>b</sup>Time accommodating students with food allergies was not obtained for interview participants

**Table 5.2** Organizational Culture Assessment Instrument<sup>a</sup> Results (n=70)

| Dimensions                                                                                         | Mean <sup>b</sup> | SD    |
|----------------------------------------------------------------------------------------------------|-------------------|-------|
| <b>Dominant Characteristics</b>                                                                    |                   |       |
| The foodservice department is :                                                                    |                   |       |
| A. A personal place.                                                                               | 32.25             | 19.46 |
| B. A dynamic and entrepreneurial place.                                                            | 16.67             | 10.87 |
| C. Results-oriented.                                                                               | 22.64             | 12.91 |
| D. A controlled and structured place.                                                              | 26.44             | 16.64 |
| <b>Organizational Leadership</b>                                                                   |                   |       |
| The leadership in the foodservice department is generally considered to exemplify:                 |                   |       |
| A. Mentoring, facilitating, or nurturing.                                                          | 29.86             | 17.69 |
| B. Entrepreneurship, innovation, or risk taking.                                                   | 16.34             | 13.76 |
| C. A No-nonsense, aggressive, results-oriented focus.                                              | 16.34             | 13.76 |
| D. Coordinating, organizing, or smooth-running efficiency.                                         | 34.30             | 16.95 |
| <b>Management of Employees</b>                                                                     |                   |       |
| The management style in the foodservice department is characterized by:                            |                   |       |
| A. Teamwork, consensus, and participation.                                                         | 41.52             | 19.59 |
| B. Individual risk taking, innovation, freedom, and uniqueness                                     | 15.00             | 11.06 |
| C. Hard-driving competitiveness, high demands, and achievement.                                    | 17.43             | 16.38 |
| D. Security of employment, conformity, predictability, and stability in relationships.             | 26.06             | 17.89 |
| <b>Organizational Glue</b>                                                                         |                   |       |
| The glue that holds the foodservice department together is:                                        |                   |       |
| A. Loyalty and mutual trust.                                                                       | 32.14             | 20.21 |
| B. Commitment to innovation and development. .                                                     | 21.79             | 15.79 |
| C. The emphasis on achievement and goal accomplishment.                                            | 19.86             | 11.03 |
| D. Formal rules and policies.                                                                      | 26.2              | 18.81 |
| <b>Strategic Emphasis</b>                                                                          |                   |       |
| The foodservice department emphasizes:                                                             |                   |       |
| A. Human development.                                                                              | 27.64             | 14.29 |
| B. Acquiring new resources and crating new challenges.                                             | 23.5              | 13.23 |
| C. Competitive actions and achievement.                                                            | 16.36             | 14.44 |
| D. Permanence and stability.                                                                       | 32.5              | 19.65 |
| <b>Criteria of Success</b>                                                                         |                   |       |
| The foodservice department defines success on the basis of:                                        |                   |       |
| A. The development of human resources, teamwork, employee commitment, and concern for people.      | 33.57             | 20.75 |
| B. Having the most unique or newest products. It is a product leader and innovator.                | 18.10             | 12.39 |
| C. Winning in the marketplace and outpacing the competition. Competitive market leadership is key. | 15.61             | 13.54 |
| D. Efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical        | 32.71             | 19.57 |

<sup>a</sup>Items adapted from Cameron and Quinn (2006) with permission, <sup>b</sup>Potential scores ranged from 0 to 100.

**Table 5.3** Overall Means and Standard Deviations for Culture Types

| Culture Type | Mean <sup>a</sup> | SD    |
|--------------|-------------------|-------|
| Adhocracy    | 19.22             | 9.82  |
| Clan         | 32.70             | 14.04 |
| Hierarchy    | 29.91             | 14.26 |
| Market       | 18.17             | 9.10  |

<sup>a</sup>Represents mean of 6 dimensions corresponding to each culture type, range 0 to 100 (0=no agreement with statements, 100=full agreement with statements)



**Table 5.4** Departmental Culture Characteristics Explained by Interview Participants

| Theme                      | Code                   | Illustrative Quotes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clan (collaborate) culture | Personal Relationships | <p>“I think the chefs get to know the students that visit that station all the time... they talk amongst one another and they get to know each other.”</p> <p>“A lot of our, our student employees are also very close to their direct supervisors as well.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                            | Extended family        | <p>“And it’s just a very welcoming department, and that’s just, I mean, that’s really the vision of our director, to just be very...I mean, like family.”</p> <p>“And when managing our employees, we are definitely not as structured in regards to that we kinda treat them more like family...”</p> <p>“we’re always workin’ towards that goal of makin’ sure that, since we spend so much more time here at work with these individuals, we’re more like that extended family where we tell everybody good mornin’ and hugs and bringin’ coffee to each other.”</p> <p>“So, I mean, I feel like that, I mean, like we’re basically [the students’] family. We’re cooking them dinner and your mom and dad usually cook them dinner so, I mean, we’re kinda like their family and make them feel like they’re at home...”</p> |
|                            | Nurturing/caring       | <p>“Anytime we can help people develop and grow... in their professional lives, that’s our emphasis.”</p> <p>“I had an employee that just threw his back out and...corporate policy is that he should go on medical leave until he’s cleared of all restrictions unless there’s any positions open. The checker, who does not like working in the kitchen—actually she’s amazing in the kitchen, but she doesn’t like it volunteered to work his shift in the kitchen and let him work the checker stand where he, where it fit within those accommodations, so he didn’t lose out on any pay, he was able to work.”</p> <p>“not only with our staff, but with our students that are on campus. It’s very...nurturing and loving and caring”</p>                                                                                 |

|                             |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | Mentoring              | <p>“Also cooks. We have a, if you have a dishwasher who wants to be a cook, you know, we love that!... Well, let’s, let’s train you. Let’s train you, let’s maybe have you cook.”</p> <p>“We love our chefs to mold and mentor those under them, make sure that they can grow in their individual...ways.”</p>                                                                                                                   |
|                             | Collaboration/teamwork | <p>“like with food allergies, we all just work together to make sure we can accommodate.”</p> <p>“There’s people that have helped <i>me</i> when I’ve been so busy ‘cause something came down from our chancellor and gotta get done. You know, let me get a, a supervisor, an assistant director coming in, saying “Hey, let me help you do this. Tell me what I need to do.” So, it’s, we all want each other to succeed.”</p> |
| Hierarchy (control) culture | Oversight              | <p>“our facility is run by policies and procedures”</p> <p>“Our facility is tightly controlled by the university, so a lot of our policies and procedures come from them...we have to get approval about everything that we do through the university.”</p>                                                                                                                                                                      |
|                             | Stability              | <p>“...we don’t take many risks. We tend to stay on the conservative safe side”</p>                                                                                                                                                                                                                                                                                                                                              |
| Adhocracy (create) culture  |                        | <p>“...find new things and keep up on new trends.”</p> <p>“we, we have a really creative cooking team... they all kind of play off of each other so I think they come up with a lot of new ideas and implement them throughout the year.”</p>                                                                                                                                                                                    |

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## **CHAPTER 6: GENERAL CONCLUSIONS**

The purpose of this study was to explore food allergy accommodation practices and policies in CUs using organizational culture as a theoretical lens. Approaches to accommodating students with food allergies were identified; content of the policies were evaluated; perceived organizational culture was determined; and the impact of organizational culture on food allergy accommodation practices was examined. This chapter summarizes study findings, limitations, and suggestions for future research.

### **Summary of Results**

For the questionnaire phase of the study, 342 foodservice professionals received an e-mail with a link to the questionnaire; 76 (22.2%) responses were deemed usable for analysis. The age of questionnaire participants was evenly distributed between groups: 22 (28.9%) were under 40 years old, 23 (30.3%) were 41-50 years old, 25 (31.6%) and 7 (9.2%) were over 60 years old. Most respondents were female (n=46, 60.5%) and most respondents had a Bachelor's degree or higher (n=62, 81.5%). Sixty-two (81.5%) questionnaire participants worked in self-operated foodservices, and 45 (59.2%) worked in private institutions. Though every geographic region was represented by the questionnaire sample, most (n=26, 35.6%) participants worked in the Midwest region.

Forty two questionnaire participants indicated interest in the follow up interview. Eleven foodservice professionals agreed to participate in the follow up interview. Interview participants represented all of the geographic regions. Seven worked at public institutions and four worked at private institutions. Seven interview participants worked as either their foodservice operation's nutritionist or dietitian while three were either a foodservice manager or director and one was a marketing manager.

The researcher sought to address seven specific objectives and test six hypotheses. A summary of key findings is discussed below each study objective.

*Research objective 1) Analyze formal (published) policies and procedures for food allergy accommodation in CU foodservice operations.*

Fifty-five questionnaire participants (72.4%) reported food allergy accommodation policies were in place at the departmental level, and 32 (58.2%) participants reported food allergy policies were in place at the institutional level. The most common content in departmental-level policies included training/professional development requirements for foodservice staff (n=53, 96.4%), involvement with nutritionist or dietitian (n=47, 85.5%), appointed contact person for food allergy accommodation inquiries (n=45, 81.8%), and outline of student qualifications and eligibility criteria (n=37, 67.3%). At the institutional level, the most commonly reported policy content included the requirement for documentation of disability due to food allergy (n=22, 88%), requirement of multiple departments' coordination of accommodation efforts (n=19, 76%), and appointment of contact person for accommodation inquiries (n=18, 72%).

Six (54.5%) interview participants reported food allergy accommodation policies were currently in place at their institutions. Though one interview participant estimated her institution's food allergy policy had been in place for about ten years, others indicated their policies were between two and four years old.

*Research objective 2) Determine whether variation in the presence of food allergy policies exist between different types of CU foodservice operations.*

Two hypotheses were developed to address this objective.

H<sub>1</sub>: Public CUs will have greater likelihood of formalized food allergy accommodation policies in comparison to private CUs.

Questionnaire data supported this hypothesis. Two sample population proportions were employed to assess differences in the presence of departmental food allergy policies between private and public institutions as well as contract-managed and self-operated foodservices. Thirty-six (80%) public institutions and 19 (63%) private institutions were reported to have departmental level policies in place; this was statistically significant difference at the  $p < .1$  level ( $z=1.39$ ,  $p = .087$ ). Given the lack of statistical power related to small sample size, a higher  $p$  level was used to test for significance.

H<sub>2</sub>: Contract managed operations will have greater presence of formalized food allergy accommodation policies at the departmental level than self-operated.

Two sample population proportions were used to test this hypothesis; results supported this hypothesis. Departmental level policies were reported for twelve (86%) contract managed operations in comparison to 43 (69%) self-operated foodservices; contract managed operations had statistically greater presence of formalized food allergy policies than self-operated foodservices ( $z = 2.32$ ,  $p = .010$ ). The higher rate of formalized policies among contract-managed CU foodservice operations may be due to the fact that policies are passed down to the operation from the managing company. Furthermore, contracted foodservice companies serve a variety of organizations ranging from healthcare (e.g. hospitals, long term care), to schools, to CUs, to businesses so corporate food allergy policies may be informed by viewpoints from each of these organization types. An interview participant explained how his management company had a general corporate-level food allergy policy that was informed by years of experience in handling clientele (namely in healthcare setting) with food allergies. He indicated that the



general corporate-level policy was then adapted to the CU foodservice operation. In this case, the fact that the foodservice operation was contract managed reportedly had an impact on the presence of food allergy policy.

*Research objective 3) Evaluate food allergy accommodation practices in CU foodservice operations.*

Food allergy accommodation practice scores were computed from a total of sixteen questionnaire items. The overall mean practice score was 9.01 (SD = 2.79) on a scale of zero to 16. One hypothesis was tested related to this objective.

H<sub>3</sub>: Private CUs will follow a larger number of food allergy accommodation practices in comparison to public CUs.

Mean practice score for private institutions, 9.16 (SD = 2.79), was greater than mean practice score for public institutions, 8.79 (SD = 2.79), however the difference was not statistically significant ( $p = .365$ ). Given the small sample size and variability of the means, there was insufficient evidence to support this H<sub>3</sub>.

*Research objective 4) Identify prominent organizational culture types among CU foodservice operations.*

Culture types were identified using participants' responses to the modified Organizational Culture Assessment Instrument questionnaire items. Seventy questionnaire participants completed the OCAI items. Prominent culture type was hypothesized in the following:

H<sub>4</sub>: Clan culture will be the predominant organizational culture type in CU foodservice departments.

As hypothesized, the most prominent culture type was clan culture (n=29, 41.4%); hierarchy culture was second most prominent (n=23, 30.3%). Market culture and adhocracy

were least prominent with 7 (10%) and 6 (7.9%) questionnaire participants identifying with these types, respectively. Based on provided descriptions, interview participants were asked about the organizational culture of their foodservice department and institution. The interviews yielded descriptive explanations of culture types.

Similar to questionnaire results, interview participants most frequently identified with clan culture. Some participants self-identified two prominent cultures in the foodservice department however the majority (n=10) identified clan culture. When asked to explain this selection, participants discussed ways in which members of their foodservice departments were nurturing, valued relationships (with both coworkers and students), and treated one another (and students) as extended family. Mentoring, teamwork, and collaboration were also explained to embody clan culture.

*Research objective 5) Explore CU foodservice directors' conceptualization of culture within the operation.*

When asked to define culture, several interview participants described the norms, assumptions, and values that underlie how an organization functions. For example, an interview participant from the Midwest region said:

Culture, to me, is the belief system, the practices that you put in place and you live... It's not necessarily the rules or the systems. It's how you run the operation and how you live...

(Hank, private institution)

Interview participants acknowledged that organizational culture may embody more than one type from the competing values framework, however they selected one or two with which they most identified. As indicated, interview participants most often identified with clan culture and therefore a large number of codes described this culture type. A participant from the

Continental region explained how members of the foodservice department support students, as part of an extended family:

So, I ...feel like that... we're basically their family. We're cooking them dinner and your mom and dad usually cook them dinner so, ... we're kinda like their family and make them feel like they're at home... (Betty, private institution)

Supporting students was not a novel attribute to clan culture as other interview participants also discussed the importance of taking care of students, and making them feel comfortable.

Participants noted CUs are, in many cases, the students' homes – not just where students receive their education. Another participant said:

Students are required to live on campus, and so we want it to feel as much like home as it can for them...with the allergies, we don't want them to feel like they are a hindrance to us. We want to make it very easy, just like it would be at home for them. (Fay, public institution)

Clan culture was described as a nurturing and caring environment. Employees genuinely cared for one another and wanted to see each other succeed. Therefore caring for one another as people, and mentoring each other as professionals were important values for those who identified clan culture. A participant from the Southern region indicated:

We love our chefs to, you know, mold and mentor those under them, make sure that they can grow in their individual...ways. I actually worked my way up from working in one of our retail locations as a student all the way through graduation, after graduation, and then now, I'm in this full-time role. (Amy, public institution)

Caring, nurturing, and mentoring co-workers may help create an environment conducive to collaboration and teamwork. Four interview participants gave examples of how collaboration and teamwork are important in their workplaces.

Four interview participants identified with the description of hierarchy culture in their foodservice departments. Three of them discussed how policies and procedures help provide oversight and stability within the operation. For example, a participant from the Southern region discussed how there are policies and procedures that govern what is done in her foodservice operation:

If this happens, then this form must be filled out in this amount of time. You must do, we have a lot of, we have...not a lot, but we have some must-do's that there's no give on. (Ivy, public institution)

A participant discussed how important these procedures, or controls, are when feeding a large volume of people in a short time period:

The control is very important for, you know, feeding thousands of people and keeping our, you know, our costs in line. (Judy, private institution)

These were some of the most prominent conceptualizations of hierarchy and clan cultures.

*Research objective 6). Examine impact of the culture of CU foodservice operations on food allergy accommodation practices.*

Data from both phases of research were used to address this research objective. First, questionnaire data were used to test two hypotheses.

H<sub>5</sub>: Food allergy accommodation practices differ based on culture type of the CU foodservice operations.

Practice scores were computed for the 45 questionnaire participants who reported departmental-level food allergy policies. As with research objective three, the maximum practice score was 16. Differences in mean practice scores between culture types were determined using ANOVA. The hypothesis was not supported because F (4, 45) value was 1.142

( $p = .349$ ). Therefore, no significant difference between food allergy accommodation practice scores existed based on identified organizational culture type.

H<sub>6</sub>: Comprehensiveness of food allergy accommodation policies differ based on the culture type of the CU foodservice operations.

The quality of departmental food allergy policies was assessed by computing the total number of items (out of 11) included in the policy. ANOVA was used to test the hypothesis. Because  $F(4, 47)$  was 1.213 ( $p = .318$ ), the hypothesis was not accepted. In other words, no difference in mean comprehensiveness score was detected based on culture type. Differences existed between mean scores, however, given the variability of the means and the low statistical power due to sample size, these differences were not significant.

Interview participants were asked whether they perceived the culture of their foodservice department, or institution, impacted accommodation of students with food allergies. Many participants noted characteristics of the clan culture visible at the departmental level were helpful in the provision of accommodations. When foodservice employees developed relationships with students and considered them part of an extended family, they may have more concern for the well-being of those students. This heightened level of concern may then serve as a source of motivation for providing the best accommodations possible. A participant from a private institution said:

It's right in the messaging that we use....By making that personal connection, 'cause we encourage that, you know, beyond the allergen program, I want my staff to know the students by name and the customers by name and, ...I'm a big advocate for, ... greeting everybody and telling 'em "Have a good day." And so, by tying that into the allergen program, you see it more like you're taking care of somebody instead of an added chore of, "Ohhh, I gotta make

sure on these labels and I can't, I can't change the recipe the way I want to." You know, you're doing it because you're, you're taking care of somebody. They're counting on you.

### **Conclusions**

This study examined food allergy accommodation practices and policies in CUs using the Competing Values Framework of organizational culture as a theoretical lens. All participating foodservice professionals reported some degree of accommodations for students with food allergies. However, there was a wide range of formalization to the practices followed. Reportedly, some institutions helped students navigate CU foodservices by providing ingredient and menu information while others had highly specialized services including separate production and/or service areas and customized menus.

Differences in the presence of published policies were found based on institutional demographics. A significant difference existed in the presence of food allergy accommodation policies between public and private CUs such that a greater percentage of public institutions had formalized policies in comparison to private institutions. Public institutions are highly complex organizations and generally serve a greater number of students than private institutions. Formalized policies may help outline the role various foodservice and CU professionals have in accommodating students with special dietary needs. A significant difference also existed between contract managed and self-operated foodservice departments such that contract managed operations had more formalized policies than self-operated foodservice departments. This may be because contracted foodservice companies draw upon a wider range of experience with accommodations and policies in different settings and states. Also, policies may be acquired from the contracted company as opposed to the foodservice unit itself as noted in interviews.

Both questionnaire and interview participants most frequently identified with characteristics of the clan culture, and hierarchy culture was a close second. Interview participants provided examples of how their foodservice departments embodied each of these culture types. Though no significant differences were found between culture types and accommodation practices and policies after analyzing the questionnaire data, interview participants discussed ways in culture impacts the approach to accommodations. The development of relationships with students (characteristic of clan culture) can be a source of motivation for employees to make extra effort in providing accommodations for students. The control aspect associated with hierarchy culture may be helpful in terms of establishing policies and procedures to make accommodations both efficient and reliable.

### **Limitations of the Study**

The study sample included only CU foodservice professionals who worked at four-year institutions and were members of NACUFS in 2014. Though a large number of four year institutions were represented in the sample, all were not represented thereby making it inappropriate to generalize to all CUs. Due to constraints with the questionnaire distribution procedures as required by NACUFS, only two attempts to recruit participants were made. Additional attempts may have yielded an overall higher rate of response.

This study used self-reported data to address the research objectives. Though this provided insight into CU foodservice professionals' perceptions about food allergy accommodations, the accuracy of their reports may be questioned. One finding from the pilot study, which involved three foodservice professionals from the same operation, was that report of accommodation practices and perceived organizational culture differed by person. This may

have been due to different levels of familiarity with the accommodation program or different perceptions of culture related to their position on the organizational chart.

### **Recommendations for Future Research**

Future research may recruit multiple participants from each institution to gain a more robust understanding of organizational culture as perceived by more than one member of the organization. Subcultures may exist within different units or levels of an organization; these are difficult to assess without multiple viewpoints from each single institution. Perhaps future research may involve multiple members of the foodservice department, and/or the person to whom the foodservice director reports. This more inclusive approach to studying organizational culture may unveil dynamics that could not otherwise be detected.

Secondly, a more objective approach may be employed to assess food allergy accommodation practices and policies. For example, researchers may visit institutions to observe, first-hand, how students with food allergies are accommodated. This may involve interviewing multiple foodservice and CU professionals involved in accommodations, and reviewing any documents or policies that are utilized. Systematic content analysis of published documents may provide a more accurate depiction of formalized policy content and comprehensiveness than what was achieved by this study. Additionally, future studies may evaluate the strength (i.e. specificity, directedness) of language used in the published policy, similar to the WellSAT approach to policy evaluation (Schwartz et. al, 2008).



## APPENDIX A: HUMAN SUBJECTS APPROVAL

**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

Institutional Review Board  
Office for Responsible Research  
Vice President for Research  
1138 Pearson Hall  
Ames, Iowa 50011-2207  
515 294-4566  
FAX 515 294-4267

**Date:** 10/17/2014

**To:** Kelly Abdelmassih  
31 MacKay

**CC:** Dr. Susan Wohlsdorf Arendt  
9E MacKay Hall  
Lakshman Rajagopal  
10 MacKay Hall

**From:** Office for Responsible Research

**Title:** Food Allergy Accommodation Policies in Colleges and Universities: An Investigation Using Organizational Culture as a Theoretical Framework

**IRB ID:** 14-522

**Study Review Date:** 10/16/2014

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

**Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form.** A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other**

**entitles will be granted.**

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or [IRB@iastate.edu](mailto:IRB@iastate.edu).

## APPENDIX B: INVITATION E-MAILS

Subject Line: Graduate student requesting assistance with food allergy management research

Dear Foodservice Professional,

I'm a graduate student at Iowa State University working on a research project concerning food allergy accommodation efforts in college and university foodservice operations. The goal of the study is to understand policies and procedures that are in place to serve patrons with food allergies. I am looking for college and university foodservice professionals to provide information about food allergy accommodations at their institutions.

**If another person from your department is more knowledgeable about the food allergy accommodations efforts, please forward this e-mail to him or her.**

The questionnaire will take about 20 minutes to complete.

This project has been approved by the Iowa State University (#14-522). Participation is completely voluntary and all information collected will be kept confidential and anonymous. Summary of results will be available upon request.

As a show of appreciation, participants will have the opportunity to enter a drawing to **win a \$25 Amazon Gift Card**.

If you would be willing to help with this research project, please click on the link below to provide your informed consent and begin the questionnaire.

**Survey Link:**

[https://iastate.qualtrics.com/SE/?SID=SV\\_6KcEeHjSCrUktwh](https://iastate.qualtrics.com/SE/?SID=SV_6KcEeHjSCrUktwh)

If you have any questions, please don't hesitate to contact me or my co-major professors at the contact information listed below.

Sincerely,

Kelly Abdelmassih  
PhD Candidate  
(515) 294-7474  
kmayfi@iastate.edu

Susan W. Arendt  
Associate Professor  
(515) 294-7575  
sarendt@iastate.edu

Lakshman Rajagopal  
Associate Professor  
(515) 294-9470  
lraj@iastate.edu

Subject Line: Opportunity to assist graduate student with food allergy management research

Dear Foodservice Professional,

I'm a graduate student at Iowa State University working on a research project concerning food allergy accommodation efforts in college and university foodservice operations. You may recognize my invitation as I am providing a second opportunity to participate if you have not already done so. This is the final invitation that will be sent. Thank you for your consideration!

The goal of the study is to understand policies and procedures that are in place to serve patrons with food allergies. I am looking for college and university foodservice professionals to provide information about food allergy accommodations at their institutions.

**If another person from your department is more knowledgeable about the food allergy accommodations efforts, please forward this e-mail to him or her.**

The questionnaire will take about 20 minutes to complete.

This project has been approved by the Institutional Review Board at Iowa State University (#14-522). Participation is completely voluntary and all information collected will be kept confidential and anonymous. Summary of results will be available upon request. As a show of appreciation, participants will have the opportunity to enter a drawing to **win a \$25 Amazon Gift Card.**

If you would be willing to help with this research project, please click on the link below to provide your informed consent and begin the questionnaire.

**Survey Link:**

[https://iastate.qualtrics.com/SE/?SID=SV\\_6KcEeHjSCrUktwh](https://iastate.qualtrics.com/SE/?SID=SV_6KcEeHjSCrUktwh)

If you have any questions, please don't hesitate to contact me or my co-major professors at the contact information listed below.

Sincerely,

Kelly Abdelmassih  
PhD Candidate  
(515) 294-7474  
kmayfi@iastate.edu

Susan W. Arendt  
Associate Professor  
(515) 294-7575  
sarendt@iastate.edu

Lakshman Rajagopal  
Associate Professor  
(515) 294-9470  
lraj@iastate.edu

## APPENDIX C: QUESTIONNAIRE INFORMED CONSENT

### INFORMED CONSENT DOCUMENT

**Title of Study:** Food Allergy Accommodation Policies in Colleges and Universities: An Investigation Using Organizational Culture as a Theoretical Framework

**Investigators:** Kelly Abdelmassih, Susan W. Arendt, Lakshman Rajagopal

This is a research study. The purpose of this research is to explore the organizational culture of college and university foodservice operations. Additionally, policies, procedures, and practices related to food allergy accommodation in college and university foodservice operations as perceived by college and university foodservice professionals will be studied.

If you agree to participate in this study, you will be asked to complete a three part survey concerning the culture of the foodservice operation in which you work and food allergy accommodation management measures in place. You will have the opportunity to enter your name and contact information for the sole purpose of entry into drawing for a **\$25 Amazon Gift Card**. Names and contact information provided for the purpose of the drawing will be stored in a separate file from questionnaire responses to ensure confidentiality is maintained. Once the gift cards are awarded, this list will be destroyed.

Research participants will also have the opportunity to volunteer for a follow up interview. Names and contact information entered for interview purpose will be stored in a file separate from questionnaire contact to maintain confidentiality of questionnaire responses. There are no foreseeable risks from participating in this study.

This research will help identify current food allergy accommodation efforts at colleges and universities and may be informative for industry professionals. Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time without penalty. You may skip questions which you do not feel comfortable answering.

For further information about the study, please contact Kelly Abdelmassih, [kmayfi@iastate.edu](mailto:kmayfi@iastate.edu), 515-294-7474, or Susan W. Arendt, [sarendt@iastate.edu](mailto:sarendt@iastate.edu), 515-294-7575 or Lakshman Rajagopal, [lraj@iastate.edu](mailto:lraj@iastate.edu), 515-294-9740. If you have any questions about the rights of research subjects, please contact the IRB administrator, 515-294-4566, [IRB@iastate.edu](mailto:IRB@iastate.edu) or Director 515-294-3115, Office of Responsible Research, Iowa State University, Ames, Iowa 50011.

Do you agree to participate in this survey?

- ☐ Yes (1)
- ☐ No (2)

## APPENDIX D: PERMISSION TO USE ORGANIZATIONAL CULTURE ASSESSMENT INSTRUMENT

TO: Wiley Global Permissions [permissions@wiley.com]

CC: Dr. Arendt

FROM: Kelly Abdelmassih [kmayfi@iastate.edu]

SENT: 16 October 2014 19:42

SUBJECT: Organizational Culture Assessment Instrument and Chart

Hello.

I am a PhD Candidate at Iowa State University and am requesting permission to use Kim Cameron & Robert Quinn's Organizational Culture Assessment Instrument, published in *Diagnosing and changing organizational culture based on the competing values framework* (Revised Ed., 2006).

My research will examine the impact organizational culture may (or may not) have on food allergy accommodation policies and practices in university foodservice operations. Specifically, the proposed research will use theOCAI diagnose prominent organizational cultures within foodservice departments. To my knowledge, no studies have studied organizational culture of on-site foodservice operations (such as university dining), so this research provides an opportunity to expand the use of theOCAI to this area. My specific research questions are as follows:

1. Analyze formal (published) policies and procedures for food allergy accommodation in college and university (CU) foodservice operations.
2. Evaluate whether variation in food allergy accommodation practices exist between different types of CU foodservice operations.
3. Describe food allergy accommodation practice in CU foodservice operations.
4. Identify prominent organizational culture types among CU foodservice operations.
5. Explore CU foodservice directors' conceptualization of culture within the operation.
6. Examine impact of the culture of CU foodservice operations in food allergy accommodation practices.
7. Examine the relationship between organizational culture types (e.g. clan culture) are correlated with aspects of food allergy accommodation practices (e.g. training)

My study will involve two phases. College and university foodservice directors will be recruited to participate in an online questionnaire. The questionnaire will ask participants about aspects of their food allergy accommodation programs (e.g. policies and practices). If permission is granted, theOCAI will be administered as part of the online questionnaire as well. Data from theOCAI will be used to diagnose prominent culture types of the foodservice departments; and then statistical analyses will follow to achieve the research objectives. Based on results from that

phase, interviews will be conducted during the subsequent phase. Conducting interviews with foodservice directors will help provide depth to the data collected in the first phase.

How might I obtain permission to use this instrument?

Also, I would like to request permission to include one of the figures from the book in my dissertation. That is either figures 3.2, 3.3, or 3.4. What are the steps to obtain permission to include this figure? Of course, appropriate citation of the source would be included if used.

Kelly Abdelmassih (*Mayfield*), MS, RD, LD

PhD Candidate, Teaching Assistant  
Iowa State University  
Apparel, Events, and Hospitality Management  
7E MacKay Hall  
Ames, Iowa 50011

TO: Kelly Abdelmassih [kmayfi@iastate.edu]

CC: Dr. Arendt

FROM: Wiley Global Permissions [permissions@wiley.com]

SENT: 17 October 2014 3:31

SUBJECT: Re: Organizational Culture Assessment Instrument and Chart

Dear Kelly Abdelmassih,

Thank you for your request.

Permission is granted for you to use the material requested for your thesis/dissertation subject to the usual acknowledgements (author, title of material, title of book/journal, ourselves as publisher) and on the understanding that you will reapply for permission if you wish to distribute or publish your thesis/dissertation commercially.

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Kind Regards

Emma Willcox  
Permissions Coordinator



TO: Wiley Global Permissions [permissions@wiley.com]

CC: Dr. Arendt

FROM: Kelly Abdelmassih [kmayfi@iastate.edu]

SENT: 17 October 2014 17:34

SUBJECT: Re: Organizational Culture Assessment Instrument and Chart

Thank you for your prompt response. I do have a follow up question regarding use of the OCAI. Is it alright to modify content so that it is specific to my study? More specifically, the instrument uses the term 'organization. Because I will be assessing culture of a department *within* an organization, I'd like to replace 'organization' with 'department.'

Of course, I would still cite the source appropriately and indicate the modification has been made.

Kelly Abdelmassih (*Mayfield*), MS, RD, LD

PhD Candidate, Teaching Assistant  
Iowa State University  
Apparel, Events, and Hospitality Management  
7E MacKay Hall  
Ames, Iowa 50011

TO: Kelly Abdelmassih [kmayfi@iastate.edu]

CC: Dr. Arendt

FROM: Wiley Global Permissions [permissions@wiley.com]

SENT: 21 October 2014 6:07

SUBJECT: Re: Organizational Culture Assessment Instrument and Chart

Dear Kelly Abdelmassih,

Thank you for your email.

This minor modification is approved. We wish you every success with your study.

Kind Regards

Emma Willcox  
Permissions Coordinator

## APPENDIX E: ORGANIZATIONAL CULTURE ASSESSMENT INSTRUMENT

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#### Library of Congress Cataloging-in-Publication Data

Cameron, Kim S.

Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework / Kim S. Cameron, Robert E. Quinn. — Third edition.

p. cm

Includes bibliographical references and index.

ISBN 978-0-470-65026-4 (pbk.); ISBN 978-1-118-00330-5 (ebk);

ISBN 978-1-118-00331-2 (ebk); ISBN 978-1-118-00332-9 (ebk)

1. Organizational change. 2. Corporate culture. I. Quinn, Robert E., 1946-

II. Title.

HD58.8.C32 2011

658.4'06—dc22

2010048709

Printed in the United States of America

THIRD EDITION

PB Printing 10 9 8 7 6 5 4

**APPENDIX F: ONLINE QUESTIONNAIRE**

Are you knowledgeable about food allergy accommodation efforts at your college or university?

- ☐ Yes
- ☐ No

**DEMOGRAPHICS**

D1. What is your age?

- ☐ ≤40 years old
- ☐ 41-50
- ☐ 51-60
- ☐ >60

D2. What is your gender?

- ☐ Male
- ☐ Female

D3. What is the highest level of education you have completed?

- ☐ High school
- ☐ Associates/culinary degree
- ☐ Bachelors of Arts or Bachelors of Science
- ☐ Master's degree
- ☐ Doctorate

D4. What certifications do you have? (Check all that apply)

- ☐ ServSafe® Certified
- ☐ Registered Dietitian or Registered Dietitian nutritionist
- ☐ Other. Please list: \_\_\_\_\_

D5. Indicate the (primary) management type of your foodservice operation.

- ☐ Contract
- ☐ Self-operated

D6. What is your job title?

D7. Which of the following are within the scope of your responsibilities? (Check all that apply)

- ☐ Residential dining
- ☐ Catering
- ☐ Vending
- ☐ Housekeeping residential
- ☐ Custodial campus wide
- ☐ Procurement of dining food and supplies
- ☐ Procurement of supplies of all institutional areas
- ☐ Campus transportation services
- ☐ Grounds management
- ☐ Physical plant and services
- ☐ Student health center
- ☐ Nutrition education
- ☐ Nutrition counseling
- ☐ Others. List: \_\_\_\_\_

D8. How long have you been employed in college or university foodservice?

- ☐ 0-10 years
- ☐ 11-20 years
- ☐ 21-30 years
- ☐ >30 years

D9. How long have you been employed at the current institution? (in years)

D10. To your knowledge, how long has your institution been accommodating students with food allergies? (in years)

D11. What was the student enrollment for Fall term 2014 at your institution? Include all branch campuses that would be affected by decisions and policies you would implement.

- ☐ Less than 1,000 students
- ☐ 1,001 to 5,000
- ☐ 5,001 to 10, 000
- ☐ 10,001 to 20,000
- ☐ 20, 001 to 30, 000
- ☐ 30,001 to 50,000
- ☐ Over 50,000

D12. Indicate the type of institution at which you work.

- ☐ Public
- ☐ Private

D13. Which version of the Food Code has your state adopted?

- ☐ Food Code 1993
- ☐ Food Code 1995
- ☐ Food Code 1997
- ☐ Food Code 1999
- ☐ Food Code 2001
- ☐ Food Code 2005
- ☐ Food Code 2009
- ☐ Food Code 2013
- ☐ Don't Know

D14. Indicate the location (state) of your institution:

- ☐ AL
- ☐ AK
- ☐ AZ
- ☐ AR
- ☐ CA
- ☐ CO
- ☐ CT
- ☐ DE
- ☐ FL
- ☐ GA
- ☐ HI
- ☐ ID
- ☐ IL
- ☐ IN
- ☐ IA
- ☐ KS
- ☐ KY
- ☐ LA
- ☐ ME
- ☐ MD
- ☐ MA
- ☐ MI
- ☐ MN
- ☐ MS
- ☐ MO
- ☐ MT
- ☐ NE
- ☐ NV
- ☐ NH
- ☐ NJ
- ☐ NM
- ☐ NY
- ☐ NC
- ☐ ND

- ☐ OH
- ☐ OK
- ☐ OR
- ☐ PA
- ☐ RI
- ☐ SC
- ☐ SD
- ☐ TN
- ☐ TX
- ☐ UT
- ☐ VT
- ☐ VA
- ☐ WA
- ☐ WV
- ☐ WI
- ☐ WY



## FOOD ALLERGIES

A1. To your knowledge, how many incidences of severe food allergic reactions (requiring immediate medical attention) have occurred on your campus since Fall 2010? (Enter a number. Enter 0 if no known incidences.)

A2. Does your college/university currently have specific food allergen policies (written and included in governance documents and published information) in place at the institutional level?

- ☐ Yes  
☐ No

### Answer If Yes Is Selected

A2b. How long have these written institutional policies been in place?

- ☐ less than 1 year  
☐ 1-3 years  
☐ 4-6 years  
☐ 7-9 years  
☐ 10 years or more

A3. Does your foodservice department currently have specific food allergen policies (written and included in department manual) in place?

- ☐ Yes  
☐ No

### Answer If Yes Is Selected

A3b. How long have these written departmental policies been in place?

- ☐ less than 1 year  
☐ 1-3 years  
☐ 4-6 years  
☐ 7-9 years  
☐ 10 years or more

### Answer If No Is Selected And No Is Selected

Q23 A3c. Are you in the process of developing formal policies to put in place?

|                              | Yes                   | No                    |
|------------------------------|-----------------------|-----------------------|
| Institutional level          | <input type="radio"/> | <input type="radio"/> |
| Foodservice department level | <input type="radio"/> | <input type="radio"/> |

Answer If A2. Does your college/university currently have specific food allergen policies (written and incl... Yes Is Selected Or A3. Does your foodservice department currently have specific food allergen policies (written and... Yes Is Selected

A4. Which of the following are included in either the institution or foodservice department food allergen policy (written and published in governance documents)?

|                                                                                      | Institution              | Department               |
|--------------------------------------------------------------------------------------|--------------------------|--------------------------|
| Outline of qualifications and eligibility criteria                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| Required medical documentation of food allergy                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| Required documentation of disability due to life threatening food allergy            | <input type="checkbox"/> | <input type="checkbox"/> |
| Required students to sign a release of liability waiver                              | <input type="checkbox"/> | <input type="checkbox"/> |
| Contact person for food allergy accommodation inquiries                              | <input type="checkbox"/> | <input type="checkbox"/> |
| Person responsible for ordering allergen-free products                               | <input type="checkbox"/> | <input type="checkbox"/> |
| Required development of emergency action plans                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| Required multiple departments' coordination of accommodation efforts                 | <input type="checkbox"/> | <input type="checkbox"/> |
| Outlined evaluation of quality of food allergy accommodation efforts                 | <input type="checkbox"/> | <input type="checkbox"/> |
| Involvement of dietitian or person with nutrition training                           | <input type="checkbox"/> | <input type="checkbox"/> |
| Training or professional development for foodservice staff related to food allergies | <input type="checkbox"/> | <input type="checkbox"/> |

Answer If A2. Does your college/university currently have specific food allergen policies (written and incl... No Is Selected And A3. Does your foodservice department currently have specific food allergen policies (written and... No Is Selected

A5. If there are no formal policies (written and published in governance documents) in place, which of the following action steps is a student with an identified allergen advised to take? (Select all that apply)

- ☐ No advice given
- ☐ Check with dining hall/foodservice unit manager each time before eating
- ☐ Meet with the dining services dietitian at the beginning of the term to explain allergy; dietitian will develop list of acceptable menu items.
- ☐ Verbally inform foodservice staff of specific dietary needs at the beginning of the term but no further action is taken by the foodservice department.
- ☐ Sign a disclaimer document that relieves the institution from any legal liability in case the student suffers a mild or severe allergic reaction.
- ☐ Other. Please explain: \_\_\_\_\_

A6. Operational Aspects: Do you have the following available for students with food allergies?

|                                                       | Yes                   | No                    |
|-------------------------------------------------------|-----------------------|-----------------------|
| Menus with designated major allergens                 | <input type="radio"/> | <input type="radio"/> |
| Designated allergen-safe food production area         | <input type="radio"/> | <input type="radio"/> |
| Designated allergen-safe food storage area            | <input type="radio"/> | <input type="radio"/> |
| Designated allergy-friendly dining area               | <input type="radio"/> | <input type="radio"/> |
| Access to ingredient lists for all menu items offered | <input type="radio"/> | <input type="radio"/> |

A7. Training Topics: Indicate whether your department provides training on these topics for the following individuals: (Check all that apply.)

|                                                                                   | Self                     | Non-student<br>Employees | Student Employees        |
|-----------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| Departmental food allergy accommodation policies                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Basic food allergy knowledge (e.g. top 8; definitions of allergy and anaphylaxis) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Label reading to identify allergens                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Response procedures for food allergic reactions                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Cross contact prevention                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Appropriate food item substitutions                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## ORGANIZATIONAL CULTURE

The organizational culture assessment consists of descriptive statements grouped into 6 categories. In each of the 6 categories, review the statements and assign scores to the statements based on your level of agreement, as follows: Divide 100 points among the four descriptive statements in each category. For example, you might score the 4 statements as 40-10-20-30 or 5-45-50-0. If you highly agree with a statement, assign more points than if you disagree with the statement. The survey will ensure that your points add up to 100 in each category. You will not be able to move forward until they do.

### OC1. Dominant Characteristics - Category values must sum to 100 points

\_\_\_\_\_ 1.1) The foodservice department is a very personal place. It is like an extended family.

People seem to share a lot of themselves

\_\_\_\_\_ 1.2) The foodservice department is very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.

\_\_\_\_\_ 1.3) The department is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.

\_\_\_\_\_ 1.4) The foodservice department is a very controlled and structured place. Formal procedures generally govern what people do.

### C2. Organizational Leadership - Category values must sum to 100 points

\_\_\_\_\_ 2.1) The leadership in the foodservice department is generally considered to exemplify mentoring, facilitating, or nurturing.

\_\_\_\_\_ 2.2) The leadership in the foodservice department is generally considered to exemplify entrepreneurship, innovation, or risk taking.

\_\_\_\_\_ 2.3) The leadership in the foodservice department is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.

\_\_\_\_\_ 2.4) The leadership in the foodservice department is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.

### OC3. Management of Employees - Category values must sum to 100 points

\_\_\_\_\_ 3.1) The management style in the foodservice department is characterized by teamwork, consensus, and participation.

\_\_\_\_\_ 3.2) The management style in the foodservice department is characterized by individual risk taking, innovation, freedom, and uniqueness.

\_\_\_\_\_ 3.3) The management style in the foodservice department is characterized by hard-driving competitiveness, high demands, and achievement.

\_\_\_\_\_ 3.4) The management style in the foodservice department is characterized by security of employment, conformity, predictability, and stability in relationships.

Stay with us! You've done three questions like this; just three more to go!

OC4. Organization Glue - Category values must sum to 100 points

\_\_\_\_\_ 4.1) The glue that holds the foodservice department together is loyalty and mutual trust. Commitment to this organization runs high.

\_\_\_\_\_ 4.2) The glue that holds the foodservice department together is commitment to innovation and development. There is an emphasis on being on the cutting edge.

\_\_\_\_\_ 4.3) The glue that holds the foodservice department together is the emphasis on achievement and goal accomplishment.

\_\_\_\_\_ 4.4) The glue that holds the foodservice department together is formal rules and policies. Maintaining a smooth-running organization is important.

OC5. Strategic Emphases - Almost done!

\_\_\_\_\_ 5.1) The foodservice department emphasizes human development. High trust, openness, and participation persist.

\_\_\_\_\_ 5.2) The foodservice department emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.

\_\_\_\_\_ 5.3) The foodservice department emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.

\_\_\_\_\_ 5.4) The foodservice department emphasizes permanence and stability. Efficiency, control, and smooth operations are important.

OC6. Criteria of Success - Last one!!

\_\_\_\_\_ 6.1) The foodservice department defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.

\_\_\_\_\_ 6.2) The foodservice department defines success on the basis of having the most unique or newest products. It is a product leader and innovator.

\_\_\_\_\_ 6.3) The foodservice department defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.

\_\_\_\_\_ 6.4) The foodservice department defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.

Q54 If you would like, please provide additional details about food allergy accommodation efforts at your institution.

END OF MAIN SURVEY

**APPENDIX G: PILOT TEST INVITATION E-MAIL**

Subject Line: Graduate student requesting assistance with food allergy management research

Dear Foodservice Professional,

Thank you for agreeing to participate in my study. As you know, I'm a graduate student at Iowa State University working on a research project concerning food allergy accommodation efforts in college and university foodservice operations. The goal of the study is to understand policies and procedures that are in place to serve patrons with food allergies. This is a pilot test for the research study. As college and university professionals, your comments and suggestions are valuable to this research. Your input will be used to improve the readability and content of the survey. Following the survey, you will be prompted to complete a short evaluation.

This project has been approved by the Institutional Review Board at Iowa State University (#14-522). Participation is completely voluntary and all information collected will be kept confidential and anonymous.

If you would be willing to help with this research project, please click on the link below to provide your consent and begin the questionnaire. If you have any questions, please don't hesitate to contact me or my co-major professors at the contact information listed below.

**Survey Link**

[https://iastate.qualtrics.com/SE/?SID=SV\\_7VxiT1SLHJHHnZH](https://iastate.qualtrics.com/SE/?SID=SV_7VxiT1SLHJHHnZH)

Sincerely,

Kelly Abdelmassih  
PhD Candidate  
(515) 294-7474  
kmayfi@iastate.edu

Susan W. Arendt  
Associate Professor  
(515) 294-7575  
sarendt@iastate.edu

Lakshman Rajagopal  
Associate Professor  
(515) 294-9470  
lraj@iastate.edu

**APPENDIX H: PILOT TEST INFORMED CONSENT****INFORMED CONSENT DOCUMENT**

**Title of Study: Pilot Testing a Survey Exploring Food Allergy Accommodation Policies and Practices at Colleges and Universities**

**Investigators: Kelly Abdelmassih, Susan W. Arendt, Lakshman Rajagopal**

This is a pilot test for a research study. The questionnaire and instructions will eventually be used to survey other college and university foodservice directors concerning food allergy accommodation practices and policies. As college and university directors, your comments and suggestions are valuable to this research and your input will be used to improve the readability and content of the survey. Following the survey, you will be prompted to complete a short evaluation.

If you agree to participate in this pilot test, you will be asked to complete a three part survey concerning the culture of the foodservice operation in which you work and food allergy accommodation management measures in place. Your responses will be kept confidential and will be used to improve the questionnaire. There are no foreseeable risks from participating in this pilot test. Your participation in this pilot test is completely voluntary and you may refuse to participate or leave the study at any time without penalty. You may skip questions which you do not feel comfortable answering.

For further information about the study, please contact Kelly Abdelmassih, [kmayfi@iastate.edu](mailto:kmayfi@iastate.edu), 515-294-7474, or Susan W. Arendt, [sarendt@iastate.edu](mailto:sarendt@iastate.edu), 515-294-7575 or Lakshman Rajagopal, [lrj@iastate.edu](mailto:lrj@iastate.edu), 515-294-9740. If you have any questions about the rights of research subjects, please contact the IRB administrator, 515-294-4566, [IRB@iastate.edu](mailto:IRB@iastate.edu) or Director 515-294-3115, Office of Responsible Research, Iowa State University, Ames, Iowa 50011.

Do you agree to participate in this pilot test?

☐ Yes

☐ No



**APPENDIX I: PILOT TEST EVALUATION****Questionnaire Pilot Test Evaluation**

P1. Approximately how long did it take you to complete the questionnaire, in minutes?

P2. Were all of the questions easy to understand?

☐ Yes

☐ No

Answer If No Is Selected

P2b. Which questions were unclear and how could they be improved?

P3. Was the formatting of the online questionnaire easy to follow?

☐ Yes

☐ No

Answer If No Is Selected

P3b. How could the formatting be improved?

P4. Was the length of the questionnaire appropriate?

☐ Yes

☐ No

Answer If No Is Selected

P4b. How could the survey length be improved?

P5. Please provide any additional comments on how the questionnaire could be improved.

**Thank you for participating in our pilot study.**

## APPENDIX J: FOOD CODE INQUIRY

Starting with the 2009 Food Code, the “Person in Charge” is required to be knowledgeable about food allergens, and symptoms of an allergic reaction. These later versions also require employees to have food safety training, including food allergy awareness related to their assigned duties. Therefore, data were collected to determine whether the states represented in the study were on a pre-2009 version of the Food Code or 2009 Food Code (or after) version of the Food Code. As shown in Appendix F, question D3 asked respondents which version of the Food Code their state had adopted and question D4 asked respondents the state in which their institution was located. Data collected from these two questions enabled the researcher to ensure accurate information about Food Code adoption was collected. Similar to findings from the pilot study, many participants lacked knowledge of their states’ adoption of the Food Code. Half (50.68%) indicated “don’t know” when asked what version of the Food Code their state had adopted.

**Table 1:** Food Code Versions Reported by Questionnaire Participants (n=73) Compared to Researcher Identification

| Adoption of Food Code Versions                                     | Reported by Participant<br>n (%) | Researcher Identification<br>n (%) |
|--------------------------------------------------------------------|----------------------------------|------------------------------------|
| Food Code with no requirement for food allergy training (pre-2009) | 8 (10.96)                        | 26 (35.62)                         |
| Food Code with food allergy training requirement (2009 or 2013)    | 28 (38.36)                       | 47 (64.38)                         |
| Don’t know                                                         | 37 (50.68)                       | --                                 |

Two sample population proportion test was used to determine whether a difference in the proportion of institutions with food allergy policies differed according to the Food Code versions that were adopted. Because self-reported Food Code data were incomplete and potentially

unreliable, Food Code data identified by the researcher were used for this inquiry. Of the 26 participants located in states where the adopted Food Code had no requirements for food allergy training, 16 (61.5%) reported departmental level food allergy policies in place at their institution. Of the 47 participants located in states where the adopted Food Code had food allergy training requirements, 37 (78.7%) reported departmental level food allergy policies in place at their institutions. According to the analysis, ( $z = 1.34$ ,  $p = .177$ ) there is no statistically significant difference between these two groups (i.e. adopted Food Code versions with food allergy training requirement, adopted Food Code without training requirements). Given the fact that participants were not knowledgeable of the Food Code versions their states had adopted, the addition of the food allergy training component may not have had an impact on policy presence.

**APPENDIX K: INTERVIEW INFORMED CONSENT****INFORMED CONSENT DOCUMENT****Title of Study: Food Allergy Accommodation Policies and Practices at Colleges and Universities****Investigators: Kelly Abdelmassih, Susan W. Arendt, Lakshman Rajagopal**

This is a research study. The purpose of this research is to explore the organizational culture of college and university foodservice operations. Additionally, policies, procedures, and practices related to food allergy accommodation in college and university foodservice operations as perceived by college and university foodservice directors will be studied. You are being invited to participate in this study because you are a foodservice professional working in college/university operation.

*Description of Procedures*

If you agree to participate in this study, you will be asked questions concerning the culture of the foodservice operation in which you work and food allergy accommodation management measures in place. The interview will be conducted over the phone and will take about 30 minutes. The interview will be audio recorded for transcription purposes.

*Benefits*

If you decide to participate in this study, there may be no direct benefit to you. It is hoped that the information gained in this study will benefit society by advancing knowledge related to food allergy accommodation efforts in colleges and universities. This research will help identify current food allergy accommodation efforts at colleges and universities and may be informative for industry professionals.

*Costs and Compensation*

You will not have any costs from participating in this study. You will be compensated for participating in the study; if you decide to participate you will be mailed a \$25 Amazon gift card within one month of your interview. You will need to complete a form to receive payment.

*Risks*

There are no foreseeable risks from participating in this study.

*Participant rights*

Your participation in this study is completely voluntary and you may refuse to participate or end the interview at any time, for any reason, without penalty or negative consequences. You may choose not to respond to questions which you do not feel comfortable answering. If you have any questions *about the rights of research subjects or research-related injury*, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

*Confidentiality*

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy study records for quality assurance and data analysis. These records may contain private information. To ensure confidentiality to the extent permitted by law, the following measures will be taken: audio recordings will be started after initial introduction of interview to ensure personal information is not recorded; audio files will be transcribed and interview transcripts will not contain any identifying information; contact information will be stored on a secure, password protected server and only the researchers listed below will have access. No identifying personal or institutional information will be conveyed in research reports.

*Questions*

You are encouraged to ask questions at any time during this study. For further information *about the study*, please contact Kelly Abdelmassih, [kmayfi@iastate.edu](mailto:kmayfi@iastate.edu), 515-294-7474, or Susan W. Arendt, [sarendt@iastate.edu](mailto:sarendt@iastate.edu), 515-294-7575 or Lakshman Rajagopal, [lraj@iastate.edu](mailto:lraj@iastate.edu), 515-294-9740.

*Consent and Authorization Provisions*

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document, and that your questions have been satisfactorily answered. You will receive an electronic copy of the written informed consent prior to your participation in the study. A hard copy of the informed consent is available upon request.

Participant's Name (printed) \_\_\_\_\_

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

## APPENDIX L: INTERVIEW GUIDE

### **Interview Guide:**

#### **Investigating Food Allergy Accommodation Practices and Policies in College and University Foodservice Operations**

Thank you for returning your informed consent document and for agreeing to participate in this phase of research. I know you have a copy, but before we begin, do you have any questions about the informed consent or the study?

As a reminder, all of the information shared in this interview will be kept confidential. I ask that during our interview today, you do not reference real names of people or organizations. The interview will focus on food allergy accommodation practices and policies in place at your operation.

1. First, I'd like to collect a bit of information about you and your institution.
  - a. In what state is your institution located?
  - b. Is your institution private or public?
  - c. Approximately how many students do you have enrolled on your campus this year?
  - d. How many meals/day are served by the university foodservice operation?
  - e. Approximately how many students receive special dietary accommodations?
  - f. What is your job title?
  - g. In relation to the food allergy accommodation efforts at your college, what is your involvement?
  - h. How long have you been in this role?
2. Thank you for that information about yourself and institution. Now we'll move on to discussing food allergies and how they're handled at your institution.
  - a. How would you define the term food allergy?
  - b. Part of our discussion today is to help me understand food allergy accommodation programs in place at colleges and universities. Please describe a situation in which you had to accommodate a student with food allergies and how you did so.
    - i. Potential follow up questions:
      1. Without naming specific names, who was involved in accommodating that student?
      2. Are there other departments in the university (college) are involved when accommodating students with food allergies? If so, please describe.
        - a. What is their involvement?
      3. What qualifies a student for accommodations?
      4. Describe any documentation a student requesting accommodations must complete.
3. Policies and practices

- a. How does your college convey information about handling special diets for students with food allergies?
  - i. Do you have written policies and procedures related to food allergy accommodations?
  - ii. If conveyed via policies:
    1. As \_\_\_\_\_, what was your involvement in creating these policies?
      - a. Who was involved?
    2. How long have these published policies been in place?
    3. What type of information is included in these policies?
  - iii. If no policies:
    1. How are employees informed of responsibilities related to dietary accommodations?
    2. How are students informed about dietary accommodations?
  - iv. How have food allergy accommodation policies and procedures changed over the last five years?
  - v. What type of training is provided to your staff in regards to food allergy accommodation?
    1. Potential follow up questions:
      - a. How long has this type of training been offered? Whom is required to take this training?
  - vi. Describe a situation when you were unsure of how to accommodate a student with food allergies.
    1. What did you do?
  - vii. What attributes make a successful food allergy accommodation program?

#### 4. Culture

The next part of our discussion today will focus on the culture of your foodservice department. What does the word 'culture' mean to you?

- a. For my study, I am using a framework called the competing values framework to study organizational culture. This framework outlines four different culture types and their characteristics. Next, I'd like to read you a definition of each culture type and ask which sounds most similar to your foodservice department.
  - i. Control culture. (hierarchy) This type of organization is very formalized and structured place to work. Coordination, efficiency, and stability are important; and policies and procedures govern what people do.
  - ii. Compete culture. (market) This type of organization is very results oriented. Competition and achievement are important as well as getting the job done.
  - iii. Collaborate culture. (clan) This type of organization is a very personal place, like an extended family. Mentoring, nurturing, and participation are important for these organizations.

- iv. Create culture. (adhocracy) This type of organization is very dynamic and entrepreneurial. People are willing to take risks and value innovation.
- b. Which of these four culture types best define your foodservice department?
  - i. \*After selection, read selected statement again.
  - ii. Tell me how this statement describes your foodservice department.
- c. Based on identified culture type:
  - i. Control: Give me an example of how formal policies and procedures govern your day to day operations.
  - ii. Compete: Give me an example of how your foodservice department values competition.
  - iii. Collaborate: Give me an example of ways in which your foodservice department feels like an extended family.
  - iv. Create. Give me an example of how your foodservice department strives to be innovative.
- d. How does the culture of your foodservice department impact the way students food allergies are handled?
- e. We've been discussing how your foodservice department has characteristic of \_\_\_\_ culture. How would you identify your institution's culture? Would it be the same or different?
  - i. \*\*Read culture definitions again\*\*
  - ii. Explain why you believe your institution's culture is most like the \_\_\_\_ culture.
  - iii. How does the culture of your institution impact the way food allergies are handled there?

Lastly, would you be willing to share written policies and procedures, forms, or training materials used in your food allergy accommodations program?

Those are all the questions I have prepared. Is there anything additional you'd like to add in regards to today's interview?

To ensure everything we've discussed today was captured on the tape and represents your thoughts accurately, I'd like to e-mail you the transcript of today's discussion. Would you be willing to review it and confirm it accurately depicts our discussion?

Thank you for participating. As a show of my appreciation for participating in the interview, I do have a \$25 Amazon Gift Card for you. I will e-mail you a form that Iowa State University requires this form to be completed whenever compensation is given to research participants. I will mail you the gift card within a few weeks once I have received that completed form either by e-mail or mail. Do you have any questions about the thank you gift or the study itself?

Thank you again for your time and sharing your expertise!



## APPENDIX M: INTERVIEW DATA ANALYSIS

### Data Analysis: Interviews A – K Compiled

#### Description of Universities:

- Regions (and states)
  - Continental
    - Montana
  - Mid-Atlantic
    - Pennsylvania
  - Midwest
    - Michigan
    - Missouri
  - Northeast
    - Massachusetts
    - New York
  - Pacific
    - California
    - Washington
  - Southern
    - Georgia
    - Oklahoma
    - Texas
- Type
  - Public (7)
  - Private (4)
- Enrollment, Fall 2014
  - 2,800 students(estimate)
  - 2,904 students
  - 3,462 students
  - 5,034 students

- 14,964 students
- 20,517 students
- 21,492 students
- 30,786 students
- 32, 152 students
- 32,713 students
- 35,441 students

**Description of Foodservice:**

- Meals per day served
  - Residential dining only
    - 1,200 meals
    - 1,515 meals
    - 1700 meals
    - 2,500 meals
    - 2,500 meals
    - 3,000 meals
    - 4,487 meals
  - Residential, retail and other (e.g. concessions)
    - 1,800 – 2,000 meals
    - 4,000 meals
    - 10,838 meals
    - 15,000 meals
    - 20,000 meals
    - 30,152 meals
- Students receiving accommodations
  - unknown
  - 2 students
  - 3 students
  - 20 students

- 20-30 students
- 35-40 students
- 45 students
- 50 students
- 100 students
- 120 students
- 250 students
- Meal plan requirement mentioned for 6 of 11 institutions represented
- Type
  - Contract managed (n=2)
  - Self-operated (n=8)
  - Unknown (n=1)

**Job Title/Tenure/Duties of Interviewee:**

- Dietitian/nutritionist and assistant director of department; 3.5 years
  - order food, meet with students, stock kitchen, supervise production, contact person for students, liaison between foodservice, disabilities and health services
- Director (also RD), 22 years
  - Explains how things work related to food allergy accommodations. Works with staff on responsibilities and expectations, coordinates with Disabilities services. Is liaison between students and management staff.
- Director of dining services; 5.5 years
  - Employee of management company; oversees all dining processes
- General manager; 6 years
  - Works with students and disabilities resource center and managers to help student navigate the system with accommodations.
- Marketing manager since 2006 (~9 years)
  - Supports accommodations per labelling and marketing function. Does not work directly with students; Makes signage – works with sous chefs to ensure correct labeling.
- Nutrition coordinator, has food allergies

- Responsible for coordination of accommodations program
- Nutritionist (not RD – working toward credential), 6 months (position is new)
  - Meets individually with students, provides nutrition information
- Registered dietitian, 1.5 years
  - Provides tours, labels food
- Registered dietitian since May 2014 (8 months)
  - First point of contact for students with food allergies. Works with manager, purchasers to accommodate. Main job with allergens is to update information.
- Registered dietitian/nutrition educator; 8.5 years
  - Meet with students, coordinate staff & student meetings, depending on student need.
- Registered dietitian; 1 year
  - designing food allergy program – just started this past year. Writes documents on how we follow, implement and serve students based on their medical and possible allergen need.

**Themes and Codes Table**

| Themes                  | Codes                          | Sub-codes | Illustrative Quotes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|--------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Food allergy definition | Description                    |           | <ul style="list-style-type: none"> <li>• K: I think that's very vague [sigh] as far as just an actual term.</li> <li>• K: Food allergy could be, you know, something that someone assumes they have</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                         | Immune response                |           | <ul style="list-style-type: none"> <li>• B: "Somebody that has a severe allergy to something involves the immune system."</li> <li>• C: "Allergic reaction that you get by ingesting some kind of protein...body has an adverse reaction to it"</li> <li>• D: "...when your body has a reaction and builds up antibodies."</li> <li>• E "Food allergies involve the immune system, and how the body is trying to protect itself from the allergen by producing antibodies.</li> <li>• H: "Food allergy is actually a histamine response to what's actually in the food."</li> </ul>                                               |
|                         | Physical responses – allergens |           | <ul style="list-style-type: none"> <li>• A: "they have a physical response, like hives or something like that"</li> <li>• D: "It's a reaction when, when you consume something, or you don't even have to consume it!"</li> <li>• G: "... an allergen, certain proteins that people are allergic to. And a food allergen could be milk, eggs, wheat, soy, peanuts, tree nuts, shellfish, fish, but also others like sesame seed, corn, mustard. We get strawberry and many other food allergies."</li> <li>• H: "Any reaction, any reaction that somebody has in response to digesting a protein contained in a food."</li> </ul> |

|  |                                              |                         |                                                                                                                                                                                                                                                                                                                                          |
|--|----------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                              | Anaphylaxis             | <ul style="list-style-type: none"> <li>• A: “or anaphylaxis would be the extreme”</li> <li>• B: “So, you know, if it’s goin’ anaphylaxis”</li> <li>• H: “you have some people that any exposure could lead to dire consequences, including anaphylactic shock and all the horribleness that goes with that.”</li> </ul>                  |
|  |                                              | Treatment (e.g. EpiPen) | <ul style="list-style-type: none"> <li>• B: “...they carry an EpiPen with them.”</li> <li>• G: “And a food allergy is something that requires an EpiPen because of possibility of anaphylactic shock.”</li> </ul>                                                                                                                        |
|  |                                              | Severe illness          | <ul style="list-style-type: none"> <li>• B: “Something’ that could get them severely ill.”</li> <li>• G: “And food allergies are very, can be very life threatening.”</li> </ul>                                                                                                                                                         |
|  | Responsibility of people with food allergies |                         | <ul style="list-style-type: none"> <li>• G: “People who suffer from food allergies need to make sure they’re reachin out to the right people.... savvy label readers”</li> </ul>                                                                                                                                                         |
|  | Physical responses-intolerances              | GI distress             | <ul style="list-style-type: none"> <li>• A: “individuals who...have some type of GI distress when they ingest it”</li> <li>• H: “somethin’ like celiacs to the food, what’s the...a disease.”</li> <li>• I: “A food allergy is...lets’ see. It is the body’s inability to...at times, ingest in any form, a particular food.”</li> </ul> |
|  | Medical diagnosis                            |                         | <ul style="list-style-type: none"> <li>• F: “I mean, medically documented...and like legitimately tested.”</li> <li>• J: “I don’t really define food allergy as much as I define a medical need for a special dietary accommodation.”</li> </ul>                                                                                         |

|                                         |                    |                        |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|--------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         |                    |                        | <ul style="list-style-type: none"> <li>• K: “But then a probably medical professional, a physician, I would have to say someone that is...has the medical”</li> <li>• K: “I guess, documentation that proves that they cannot tolerate certain foods based on actual medical examination and tests.”</li> </ul>                                                                                                             |
| Past accommodation procedures           | Personnel          |                        | <ul style="list-style-type: none"> <li>• C: “the head chef talk with the student with the student’s parents...”</li> <li>• C: “and perhaps some of our other staff that work at the dining commons.”</li> </ul>                                                                                                                                                                                                             |
|                                         | Training           |                        | <ul style="list-style-type: none"> <li>• C: “prior to my position, there wasn’t really that much training, at least that, what I was told.”</li> </ul>                                                                                                                                                                                                                                                                      |
|                                         | Procedural changes |                        | <ul style="list-style-type: none"> <li>• E: “I think we’ve just gotten more specific with what they were because before we weren’t. We implemented this probably two-thousand-eight.”</li> <li>• E: “marking every single menu item. Before we were not doing that, and now... they’re entering into CBORD when they enter recipes, so the CBORD recipe will flag any of the allergens that we wanna mark also.”</li> </ul> |
|                                         |                    | Limited menu offerings | <ul style="list-style-type: none"> <li>• C: “But other than that, they had, they didn’t have that much allergy accommodation.”</li> </ul>                                                                                                                                                                                                                                                                                   |
| Accommodation example (can accommodate) | Notification       | By student             | <ul style="list-style-type: none"> <li>• D: “So a student might say “I’m allergic to peanuts. I need your accommodation.”</li> <li>• H: “the student has to self-identify”</li> <li>• H: “I had a young lady that was talking to my cooks telling me that she can’t have</li> </ul>                                                                                                                                         |

|  |                                          |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--|------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                          |             | <p>dairy and she could not...it was dairy...and strawberries.”</p> <ul style="list-style-type: none"> <li>• I: “the person was told to self-identify and that way the process that would be used to handle making their food would kick in”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  |                                          | By facility | <ul style="list-style-type: none"> <li>• D: “If it’s a peanut, if it’s a peanut allergy, those are, we strive to identify those in our locations with a nut sign.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  | Management/foodservice staff involvement |             | <ul style="list-style-type: none"> <li>• D: “So then we will get that student connected with the management in the operation where they think they’ll dine most.”</li> <li>• D: “will work with the students on, “When do you think you’ll be eating? How can we best accommodate you?”</li> <li>• D: “... get them working with the management team at that location so that the student can feel free to, usually it’s the sous chef, but if there isn’t a sous chef then, or an RD.”</li> <li>• D: “And then I like to have that management team follow-up with that student.</li> <li>• D: “where we’ve got a checklist, a form to complete to identify that student, what the allergy is, any accommodations that they need”</li> <li>• G: “And we meet, the student to show them what we do. We show them that we don’t use peanut oil, that we, we only have peanut butter and any kind of nuts in a special case by themselves.”</li> </ul> |



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|  |  |  | <ul style="list-style-type: none"> <li>• G: “We would assess their knowledge, and we wanna know how much they know—how long they’ve been diagnosed, have they had reactions in the past, have they used their EpiPen? We ask them, “Do you have an EpiPen?”</li> <li>• G: “We’ll show them other things, so what, we’ll take them, walk them through the dining room center where they’ll be eating most of their food”</li> <li>• G: “they meet the staff... they’ll meet the head cook, they’ll meet the supervisors, they meet the managers of that dining facility so they know who to go to. They meet me”</li> <li>• G: “They have all my contact information, and they can contact me at any time with questions or concerns.”</li> <li>• H: “So once they have identified themselves, either to the institution at large or, quite frankly, to any of my employees or myself, then I make contact with that student to get a better idea and help to find where they’re at with their allergies because some people are just sensitive.”</li> <li>• H: “once [cooks] found out about [student’s food allergy], we trained them to let me know right away.”</li> <li>• H: “is I meet with the supervisors in the locations. I meet with ‘em once a month and share with them information and identify the individual.”</li> </ul> |
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|  |  |  | <ul style="list-style-type: none"> <li>• H: “We only have about four hundred and twenty students on our meal plan, so it’s very easy to, to interact with them and...and see them on a pretty regular basis.”</li> <li>• H: “, I make sure that they have a one-on-one with the supervisor that oversees the primary retail. If it’s a board person, I have, make sure that they meet with the production manager. Basically, just giving them resources to ask questions to make sure that they, they ha-, they feel comfortable talking to them.”</li> <li>• H: “we prompted her to make sure to tell the cooks—well, we don’t have high turnover, but just in case we’d get a student employee or somebody like that—“I’m allergic to dairy” so that the y don’t just take a piece of chicken and scrape the sauce off of it”</li> <li>• H: “And, you know, one of the main things is, it’s not the movies. You don’t grab their EpiPen and jam it in their chest. We’re not doctors. We’re not administering any medicine.”</li> <li>• I: “I maintain a spreadsheet of the meals in the cafeteria, and it has all of the ingredients for those meals. So what I did for that student was, they receive that every week so if there’s any changes or anything, then they already know going in.”</li> <li>• I: “the managers in the areas that had nuts that, since they had a lotta things that did</li> </ul> |
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|  |  |               | <p>not contain ‘em, that they may have this person.”</p> <ul style="list-style-type: none"> <li>• K: “So, my first job is to find them something to eat close to their living quarters.”</li> <li>• K: “So we would go through the menu together and establish food prep items, what to watch out for, cooking top surfaces, what to avoid, and then cross-contamination issues. And then I would meet with that student in that dining location, and I would introduce them to the management and the staff. And we would just go through different scenarios of foods that they would typically purchase and some of their food choices that they like.”</li> </ul>                                    |
|  |  | Communication | <ul style="list-style-type: none"> <li>• B: “she would text me to make sure, let me know which dining hall she was going to...”</li> <li>• C: “We encourage students, at the student orientation, if they have any food allergies or food sensitivities to come talk to us if they are going to be on a meal plan with us.”</li> <li>• D: “And then they [students] should <i>always</i> feel free to ask us [foodservice staff].”</li> <li>• E: “... refer people directly to our sous chefs because <b>they</b> are the ones dealing with the food.”</li> <li>• E: “...meet individually with people who have allergies and want to talk to us about their accommodations that are needed.”</li> </ul> |

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|  |                                          |                  | <ul style="list-style-type: none"> <li>• G: “And then, I actually usually follow-up with them the day or a few days after they’ve been on campus, and then follow-up throughout the year to make sure that they’re still feeling comfortable and still getting the foods that, that they need.”</li> <li>• G: “I’m in touch with the student before they come to campus to make sure that they know when they get here, we’re gonna meet with them and put a plan in place.”</li> <li>• H: “what happens from there is that I meet with the individual just to talk to make sure that they’re comfortable. And then I go through the process that I described earlier where I make sure that they meet the supervisors and all that kinda stuff and...”</li> <li>• H: “And then typically, I’ll follow-up with the student. Usually I try to make it informal and just when I see them in the dining hall, I’ll say, “Hey, how’s it goin’?” But more often than not, if they have any issues they come and tell me”</li> </ul> |
|  | Individualized menu/specialized products | Based on student | <ul style="list-style-type: none"> <li>• B: “...so they could make proper food for her just because she was allergic to so many different things. So they would make a plain piece of chicken, rice, and a vegetable or whatever for her.”</li> <li>• F: “We did start carrying a few different products because she was also...gluten intolerant and so a lotta times gluten intolerant things have corn in them or like glut-...gluten-free things, rather, have corn</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|  |                                              |                          | <p>in them. So, we did make some product changes.”</p> <ul style="list-style-type: none"> <li>• G: “And then, if they need any special products, we’ll buy special products for them.”</li> <li>• H: “the chicken is marinated at the time and everything, and the chicken itself does not contain any dairy or, in her case, strawberries. All she has to do is ask any of the cooks if they can have a piece of chicken without the sauce on it.”</li> </ul>                                                                                                                                               |
|  |                                              | Based on dining location | <ul style="list-style-type: none"> <li>• K: “we start building a plan on where that student lives and what dining location will be their number one first focus to get them acclimated to the campus.</li> <li>• K: “After that, then I tell them when they’re ready to branch out into other dining locations that we can start to investigate other foods and other locations that would be safe for them.”</li> <li>• K: “And then we would just kinda build scenarios for them on how to order, how to purchase, maybe certain things they would ask the staff to do to help keep them safe.”</li> </ul> |
|  | Medical documentation/medical identification |                          | <ul style="list-style-type: none"> <li>• A: “And he brought all that paperwork to us”</li> <li>• C: “...don’t personally take in any medical documents.” [like a doctor’s note]</li> <li>• C: “And we ask them if they have a medical alert bracelet. And if they don’t have a medical alert bracelet, we should probably encourage that before they come to campus.”</li> </ul>                                                                                                                                                                                                                             |

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|  |                    |  | <ul style="list-style-type: none"> <li>• H: “if they have any medical documentation or anything like that, I share that with the school which often triggers an ADA interview with the school just because they have different documentation that they have to do for ADA compliance.”</li> <li>• H: “Then all this stuff is documented via email, and we keep it in a log...on, in Google Docs that acces-, accessible by all of my, my supervisors and the client care at the school so that they’re aware of what we’re doin’.”</li> <li>• H: “We have a documentation process for that as well. And, heaven forbid, it never happens, but if someone were to go into anaphylactic shock, what they’re supposed to do”</li> <li>• K: “typically start with a student medical information form which I gather on them.”</li> <li>• K: “And if they do have medical documentation, I request for that to be emailed or hand delivered or they can fax it as well. I then take those documentations...”</li> </ul> |
|  | Multiple allergies |  | <ul style="list-style-type: none"> <li>• A: “We have one student that has several allergies.”</li> <li>• B: “they were allergic to a multiple, multiple things.”</li> <li>• F: “I had a student with a combination of multiple food allergies, one of which was corn which is not one of the main eight.”</li> <li>• G: “a student came in with a peanut and a tree nut allergy.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|  |                 |  | <ul style="list-style-type: none"> <li>• H: “that she can’t have dairy and she could not...it was dairy...and strawboies.”</li> <li>• I: “We had someone who was...anaphylactic towards nuts—peanuts and tree nuts”</li> <li>• K: “I recently had an anaphylaxis to dairy allergy student at the beginning of the semester”</li> <li>• K: “have a student that is extremely sensitive to gluten, but that is not his first, or that’s not his only allergy. He’s also allergic to seven other basic foods.”</li> </ul>                                                                                                                                                                                                         |
|  | Prescribed diet |  | <ul style="list-style-type: none"> <li>• A: “He was put on a very strict two-day healing diet by his gastroenterologist and his nutritionist back home.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  | Resources       |  | <ul style="list-style-type: none"> <li>• D: “Showing them [computer program] which is our, our website...It connects with our computerized food production system, so it’s tailored to our recipes. Students can get the ingredient information as well as the nutritional breakdown and plan their meals or analyze them afterward.”</li> <li>• D: “But if they use [computer program], they should be able to get the best general idea.”</li> <li>• D: We’ll show them a label if they wanna see the label.”</li> <li>• G: “We have an online menu that will indicate where peanuts and tree nuts appear.”</li> <li>• G: “every dining facility has a certain spot that will have the food for that person if we</li> </ul> |

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|  |  |  | <p>have to accommodate them with a special purchase.”</p> <ul style="list-style-type: none"> <li>• H: “Although my staff has access to all the same information in regards to what’s contained in our foods, I’d much rather be proactive and speak to the employee.”</li> <li>• H: “make sure they understand our, our system of labeling so that they know what contains what foods.”</li> <li>• H: “All of our menu items are completely available with all the ingredients and everything, and on our menus—both online and at the stations—have labeling that tells them what is contained in the food so that they know that, what’s in it.</li> <li>• I: “And they were told the different areas that there are no nuts served whatsoever.”</li> <li>• J: “what we have is, we have one residential dining hall, “</li> <li>• J: “so that’s different than a lotta campuses because a lot of campuses would have, in each residential hall, kind of on the main floor, they would have a dining area.”</li> <li>• J: “So all the students come to this one residential dining hall, so that takes away some issue which is that, you know, are you providing equal accommodations at all of your residential dining halls.”</li> <li>• J: “Since we only have one, it’s all equal.”</li> <li>• J: “So I always advise the students to check our online mobile site for the, for the latest ingredients”</li> </ul> |
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|                                           |                         |  | <ul style="list-style-type: none"> <li>J: “And also, I’m, I am available to <b>all</b> students, <b>all</b> the time. I mean, they can, any student on campus can make an appointment with me for any reason.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Accommodation example (can’t accommodate) | Student characteristics |  | <ul style="list-style-type: none"> <li>C: “she had a particularly severe food allergy to three main food items. I think it was like dairy, eggs, and a specific kind of nut.”</li> <li>D: “On, one student could have, couldn’t consume nothing by mouth, period. So we were not able to...accommodate. He was on total parenteral nutrition.” [Not FA related]</li> <li>D: “Another student who.... Could consume six different foods. That was it. .. we ended up saying, “ok, we will stock those six foods. We will keep those every day they’ll be there” [Not FA related]</li> <li>I: “They were anaphylactic to corn. And corn is so pervasive. Worse than wheat...”</li> <li>I: “It’s so pervasive that there was just not a way we could...totally guarantee that there would not be any cross-contact with it because this person was anaphylactic to <b>all</b> forms, no matter... [sigh] you know, whether it was dextrose or whether it was corn starch or whether it was corn flour, it didn’t make any difference”</li> </ul> |
|                                           | Efforts                 |  | <ul style="list-style-type: none"> <li>C: “we tried our best to accommodate her”</li> <li>C: “Gave her all the menus”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                           | Results                 |  | <ul style="list-style-type: none"> <li>C: “every time she’d eat at the dining commons she was still having pretty severe reactions to the foods, even though they</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|                                               |                 |  | <p>didn't necessarily have the specific allergen that she was allergic to in that food."</p> <ul style="list-style-type: none"> <li>• C: "I think it was because the cross-contamination or the cross contact was too much for her. So she kept having allergic reactions."</li> <li>• C: "...we're still kind of working through it... I'm assuming that she's been let off of the meal plan"</li> <li>• D: "We exempted him from the dining plan."</li> <li>• I: "what we did was, in the accommodation they were let out of the foodservice contract, but they get to live on, we have one floor in one of our towers that has a card-access kitchen."</li> <li>• I: "So they get to live on that floor."</li> </ul> |
|                                               | Parent response |  | <ul style="list-style-type: none"> <li>• C: "her parents were trying really hard to actually keep her on the meal plan because they wanted her to still have the freshman experience."</li> <li>• C: the parents felt that...we, as a facility, should be trying harder to make accommodations."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                             |
| Deciding if accommodations possible (example) | Communication   |  | <ul style="list-style-type: none"> <li>• C: Talk with one of the supervisors and she would try to work with them</li> <li>• H: "Once they've self-identified, I sit down and I meet with them, typically with our production manager who oversees all of our food production on campus, to discuss our ability to be able to accommodate"</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    |

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|  |                   |  | <ul style="list-style-type: none"> <li>• I: “if I make the determination that we cannot accommodate, then I go to the director of foodservices.”</li> <li>• K: “Not only was he allergic to gluten, but corn and egg and, you name it, so it was qwut-, quite a frenzy for [laugh] the management staff and it makes them very nervous because they don’t wanna make him sick.”</li> <li>• K: “I called for a group meeting. We had the manager of the facility in which he was livin’, the executive chef, and the parents and the student before the student even became an actual student on campus. They met with me before he was enrolled, and then we went through all the scenarios of what would or could happen if he ingested some type of one of these food allergens that he’s allergic to.”</li> </ul> |
|  | Meal plan release |  | <ul style="list-style-type: none"> <li>• C: If student and parents insist and our facility believes that we’re not able to accommodate... then let them off the meal plan</li> <li>• H: “when you live on campus you’re required to have a meal plan. And meal plans aren’t cheap. So if you can’t eat three-quarters of the food that I’m serving, they would like to get out of their meal plan”</li> <li>• H: “even before we started this whole compliance thing, there’s been a few employees, or students, I’d say probably three in the five years that I’ve been here,</li> </ul>                                                                                                                                                                                                                            |

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|                                     |                            |  | <p>that have been let out of the meal plan because they really couldn't be safe in the dining hall,</p> <ul style="list-style-type: none"> <li>• K: “. To be able to be released from an actual...dining facility, a required...plan, they have to prove medical documentation that they are physically at risk by purchasing and eating on campus.”</li> <li>• K: “So that is quite lengthy of a process.”</li> </ul>                                                                                                                                                                                                                                                                                      |
| Accommodation philosophy/motivators | Adaptable to student needs |  | <ul style="list-style-type: none"> <li>• K: “I think that often we, we try to find one system that works best in food allergies, and even with student care. And we have to remember that every condition is very individualized and you can't put the same box around every situation here, you know. We have to be adaptable by also following those formal policies as well.”</li> <li>• K: “any time we can have a little bit of flexibility by being able to accommodate the student that maybe has twelve allergies instead of just that one, we have to really learn how to adapt. And, and that's gonna be a process that takes a lotta time and a lotta effort and a lotta compassion.”</li> </ul> |
|                                     | Lesley case/ADA            |  | <ul style="list-style-type: none"> <li>• B: “They, because of the—I wanna call it school, it's outta my brain—the Wesley House? Is that what it's called?”</li> <li>• B: “Yeah, the Leslie case. We now have forms that students have to fill out if they're requesting different housing accommodations or getting off the meal plan.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                          |

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|  |                     |  | <ul style="list-style-type: none"> <li>J: “And last year when the Lesley ruling, you know, became widely talked about, we changed and we started doing training twice a year.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  | Accommodate anybody |  | <ul style="list-style-type: none"> <li>B: “Just basically if they request for it.”</li> <li>B: “we’re gonna try to accommodate as many as we can”</li> <li>D: “We will work with any student who has a special dietary need.”</li> <li>E: “To some extent, we’re able to accommodate anybody who has asked us in the past.”</li> <li>F: “we accommodate absolutely every combination of food allergies imaginable.”</li> <li>F: “Not really” (when asked about a situation unable to accommodate)“because we require ‘em to live on campus, the department has made it a priority that we accommodate them.”</li> <li>G: “We can accommodate any food allergy at any of our facilities, including our catering department.”</li> <li>G: “if it’s an accommodation that’s something that we can accommodate in the dining facilities, then we’ll work with them.”</li> <li>G: “we really haven’t turned anybody away for any kind of accommodation.”</li> <li>H: “Now we accommodate everyone to the best of our abilities...”</li> <li>H: “The other thing is too that we treat everyone as if they have a food allergy, like they have a food allergy until at least, until</li> </ul> |

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|  |                              |  | <p>I can sit down and talk to them because some people will say that they're allergic to things just because they don't like them."</p> <ul style="list-style-type: none"> <li>• H: "Or they may have gotten sick once when they ate a food that happened to have something on it and so they think they had a food allergy. And even after I interview them, if they're still convinced they have a food allergy then, you know what? We're gonna try and take care of 'em"</li> <li>• J: "we're trying to balance... taking a, a scientific or a legal point of view with a holistic we-wanna-take-care-of-the-student point of view."</li> </ul> |
|  | Not all requests granted     |  | <ul style="list-style-type: none"> <li>• B: "not all the requests are gonna be granted"</li> <li>• B: "I think there was a few that we didn't accommodate."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  | Required meal plan           |  | <ul style="list-style-type: none"> <li>• A: "we do our very best to insure that we accommodate as many students as we can because our dining program is required for our freshmen that live on campus"</li> <li>• C: "Yes, they are. For all incoming freshmen it's required."</li> <li>• C: "... want the students to be, to keep on the meal plan"</li> <li>• F: "our guests are required to live on campus and have a meal plan their first year here."</li> <li>• G: "they have to be on campus for two years here."</li> </ul>                                                                                                                 |
|  | Fostering sense of community |  | <ul style="list-style-type: none"> <li>• A: "to create that sense of community and service within our department for these</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|  |                 |  | <p>students, we do everything we possibly can to treat ‘em like they’re our clients. We want them to feel like they’re an individual and that their needs matter to us. And they really do”</p> <ul style="list-style-type: none"> <li>• J: “we want it to be inclusive. We don’t want the student to...you know, take all their meals back to their room and eat in their room by themselves.”</li> <li>• J: “We want it to be something that is seamless and a part of their college life that helps them enjoy the same kind of social aspects and all of the activities that go along with college life.”</li> </ul>                                                                                                                                                                                |
|  | Provide support |  | <ul style="list-style-type: none"> <li>• A: “And we make sure that, you know, we’re meeting those...concerns and answering the questions and all that, that the students do have, whether they’ve been here for a semester or are just now coming in or have been here for years and, you know, have just realized that they have food allergies.”</li> <li>• A: “And so, we do all we can to express that to our staff to make sure that they show that compassion and caring towards our students to be able to accommodate them in the best way possible.”</li> <li>• D: “I like to have that management team follow-up with that student. If they don’t have regular, they need to establish regular contact. And some of them might be every day, but others it might be once a week or</li> </ul> |

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|                        |                             |  | <p>once every couple weeks. Say, “How are things going?”</p> <ul style="list-style-type: none"> <li>• H: “We don’t necessarily call it accommodations if they aren’t under ADA. It’s just more...how we’re, whatever term they use. I don’t like usin’ accommodations ‘cause then it gets confusing with ADA. Basically, how we’re helping the student.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                        | Working toward improvements |  | <ul style="list-style-type: none"> <li>• C: Trying hard to have more fleshed out accommodations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Accommodation barriers | Resource limitations        |  | <ul style="list-style-type: none"> <li>• C: “They would talk about what kinds of meal accommodations they could do within the limitations of the facility.”</li> <li>• C: “current facility even at this stage doesn’t have a lot of things that we <i>can</i> do for the student.”</li> <li>• C: “right now we simply don’t have the staff to do that.”</li> <li>• H: “we are a smaller operation, so unfortunately, it’s not realistic for us to, say someone has...a severe peanut allergy—that seems to be the one everyone talks about—severe peanut allergy where they can’t even be around a place where peanuts once, once was. We can <i>not</i> safely tell them that that’s possible because I can’t create it my, create the sanitized, isolated place to guarantee no cross-contamination.”</li> <li>• H: “I have facility limitations...”</li> <li>• I: [in relation to corn allergy example] “And there was just no way we could figure out how to do that. On a consistent</li> </ul> |



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|                                |                         |                    | <p>basis. We would have to find a cook, and that cook would've had to been there twenty-four seven, seven days a week, and there was just no way."</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Student characteristics | Risk               | <ul style="list-style-type: none"> <li>• C: "...they take a lot of risks with their, with their health so they think if they can just navigate the dining commons themselves."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                |                         | Unaware of process | <ul style="list-style-type: none"> <li>• C: "when students come on campus they're not even aware that they should be talking to us if they have a food allergy."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Interdepartmental coordination | No coordination         |                    | <ul style="list-style-type: none"> <li>• F: No other departments involved</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                | Admissions              |                    | <ul style="list-style-type: none"> <li>• B: "The... Admissions Department contacts me often. They send students my way about, they do some sort of program for incoming freshmen about like a day in the life at this college. And I'm usually alerted if there is a food allergy. And then I respond back to them via email of what they can eat and where they can eat."</li> <li>• H: "I meet with Admissions every year just to talk about what we're doing, so I make sure the Admissions people are aware of what programs we're doing."</li> <li>• H: "I've had a couple Admissions people that have identified students to me. You know, they just happened to mention that, you know, they're concerned about this and then, even before they're actually on campus, I've reached out to a couple students."</li> </ul> |

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|  |              |  | <ul style="list-style-type: none"> <li>• J: “I also...I reach out to the Admissions Department and I’ve provided training materials...”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | Disabilities |  | <ul style="list-style-type: none"> <li>• A: “And so, they would go to the Disability Resource Center and say, ‘I have this problem,’ and then they would send them to us”</li> <li>• B: “I also work with the Office of Disabilities”</li> <li>• B: “We now have forms that students have to fill out if they’re requesting different housing accommodations or getting off the meal plan.. she refers me to, students to me. And then we kinda work together with Residential Housing to see if these students actually need what they’re requesting.”</li> <li>• D: “That could be our Disability Center.”</li> <li>• D: “If the students register with the Disability Center or the special accommodation, then we, we talk with them”</li> <li>• D: “They [disabilities center] call us if somebody comes there or we send a copy of our form over if...in our information after they’ve identified there.”</li> <li>• G: “we work very closely with Disability Services”</li> <li>• G: “Disability Services, and they are involved when a student files a 504 plan based on a food allergy.”</li> <li>• G: “we work with Disability Services to make sure that we’re doing what the ADA says we should be doing.”</li> </ul> |

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|  |  |  | <ul style="list-style-type: none"> <li>• H: “because it’s [formally requesting accommodations) actually handled by our ADA officer, so I’ve got a general understanding of what he does, but I’m not actually involved in the interview.”</li> <li>• H: “There’s more than just one person in that office, but he’s, he’s the director and he’s the one that handles these cases specifically ‘cause it’s so new.”</li> <li>• H: “But he basically sits down, he reviews their documentation... There’s a form they have to fill out in regards to what the accommodations are that they need.”</li> <li>• H: “what happens is that he and I typically meet to discuss whether or not those accommodations can be made Sometimes just over the phone if it’s something easy, like one of the easy things, you know, that we’ve, we’re already managing...you know, where it gets tricky is where, unfortunately, some poor individuals have multiple allergies. And usually when these cases come up, it’s not because of the retail. It’s because when you live on campus you’re required to have a meal plan.”</li> <li>• I: “the Disabilities Resource Center...”</li> <li>• I: “What happens is they are the ones who actually gather all the medical information to make the determination that we do need to make an accommodation”</li> <li>• I: “So if they say they are anaphylactic towards...peanuts, then they would turn</li> </ul> |
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|  |  |  | <p>that information into the Disabilities Resource Center if they were going to come to us and ask for accommodations of some sort.”</p> <ul style="list-style-type: none"> <li>• I: “And all of that [documentation] goes to the resource center.”</li> <li>• I: And if they [students] have not turned in anything, then the resource center does not ask us for accommodations.</li> <li>• I: “Well, the...if they are, their contact is through Disabilities Resource. For instance, if the student needs something special in class—for instance, like asking the...professor to...ban a food item or something—that would actually, that goes through the Disabilities Resource Center and they contact the, the student’s professors.”</li> <li>• I: “Well, I’m allergic to...,” then I direct them to the resource center because I explain to them all the medical documentation goes there.”</li> <li>• J: “I’ve worked with the Disabilities so that they’re aware of what we’re doing, and they’ve basically delegated a lot of that to us.”</li> <li>• K: “And I have collaborated with Disability Services. It has not been a need at this point to actually utilize them.</li> <li>• K: “They do have my information on, on how to refer students to me, but we do <i>not</i> have an actual working relationship with</li> </ul> |
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|  |                 |                                | students to collaborate jointly. They just know how to reach out to me.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|  | Health services | Involvement                    | <ul style="list-style-type: none"> <li>• A: “...Health Services also works with us to make sure that the students don’t have any adverse reactions on campus.”</li> <li>• A: “.. and they [Disability Resource Center] would send them to us.”</li> <li>• G: “We work with... health services”</li> <li>• G: “Health Services, the director who is an RN, and the medical director, they get involved when we have a very difficult one that maybe the physician has sent medical records, and the student is asking for accommodations but we can’t meet their need, our medical director will get involved, and sometimes actually speak with the student’s doctor to come up with a plan”</li> <li>• G: “When it gets to the point where it’s getting very specific, that’s when we get Health Service’s medical director involved”</li> <li>• G: “He may request more information”</li> <li>• I: “There is a Health Center where...they would go on file if they were anaphylactic or had some other types of reaction or something, so that if they happen to go down and get transported there.”</li> </ul> |
|  |                 | Investigate allergic reactions | <ul style="list-style-type: none"> <li>• A: “if there are problems, then they [health services] let us know if that student came to them, you know, shortly after eating with us or somethin’ like that, complaining</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|  |                                   |  | of some problems. That way we could figure out exactly what happened.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | Residential services/student life |  | <ul style="list-style-type: none"> <li>• B: “I also work with the Office of Disabilities...and Residential Services, the people that do the housing placement.”</li> <li>• B: “And then we kinda work together with Residential Housing to see if these students actually need what they’re requesting.”</li> <li>• B: “Sometimes people with food, like peanut allergies don’t wanna be in the same room with somebody... that doesn’t have a peanut allergy in case somebody, they bring peanuts in. They’d have to be deathly allergic. Sometimes it has to do with...either their timing is, is off or they’re just not happy with the meal plan, and they want a kitchenette so they can cook their own food.”</li> <li>• E: At the beginning of the year we do coordinate with..... probably the SIL (the student life)”</li> <li>• G: “We work with... housing. We have a little group of us that meet together and we talk about certain accommodations.”</li> <li>• G: “we work with Housing because some students request special housing because they have a food allergy and they would like a student who, you know, is aware of it or maybe even has the same food allergy.”</li> <li>• G: “When students fill out applications... they may put on the application that they have a food allergy...So what they do is they .... Given them my contact</li> </ul> |

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|  |            |  | <p>information so then they'll call me directly for accommodations.”</p> <ul style="list-style-type: none"> <li>• I: “The director of housing is given information because, and again, this comes through the Disabilities Resource, if the student, if it seems it will be safer for the student to be in a single room...then that arrangement is worked, that accommodation is worked through the Disabilities Resource Center also.”</li> <li>• I: “But they (DRC) work in conjunction with ...housing”</li> <li>• J: “and have kinda begun conversations with Student Life, Residents Life...”</li> <li>• K: “then the other departments would be the RHA in Housing are very familiar with our relationship as far as how we accommodate students.”</li> <li>• K: “So we do work very closely with those two facilities—the RHA on campus and then the actual Housing facility.”</li> <li>• K: “Residence Halls Association”</li> <li>• K: “So I encourage [students with allergies] to introduce themselves to their RA and to also let them know about their food allergy so we can all kinda collaborate together if there's ever an issue</li> </ul> |
|  | Other      |  | <ul style="list-style-type: none"> <li>• H: “I'm fairly certain that the, the EpiPen person is also identified at Security.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | None known |  | <ul style="list-style-type: none"> <li>• C: “Not, not that I'm aware of, although there, there could be.” [other depts. Involved]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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| Qualifications | Allergens accommodated |  | <ul style="list-style-type: none"> <li>• A: "...station in one of our residential dining facilities that is top nine allergen free... you have your normal eight... so you have your dairy, your peanut, wheat, fish, tree nuts, shellfish, egg and soy. And then we added sesame."</li> <li>• B: "We don't serve seven of the top eight allergens. We do serve, we do serve fin fish..."</li> <li>• E: Top 8 plus "... and then cinnamon because we had somebody that has an anaphylactic cinnamon allergy this year."</li> <li>• H: "we identify the eight primary allergens"</li> <li>• J: "Right now, the, the largest numbers are in gluten free and nut allergies. So the nut allergies, the gluten free numbers kind of peaked a couple years ago and they're, they're leveling off. And the nut allergies are spiking now."</li> <li>• J: "maybe three years ago, probably sixty, seventy-five percent of the students were coming to me with gluten issues. Now it's, it's more...it's down to maybe half and the, the nut percentage has increased."</li> <li>• J: "I have a couple that have anaphylactic reaction to...milk"</li> <li>• K: "That depends on what kind of accommodation they're requesting"</li> <li>• K: "So it varies...very much"</li> <li>• J: "I have a few students who have very specific and/or multiple allergens."</li> </ul> |
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|  | Not sure                   |                  | <ul style="list-style-type: none"> <li>I: “They have...I, I’m sorry, I haven’t looked at that because they have specific criteria on the website before the students get here that they can look at. So therefore they can bring it in.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | Non-allergy accommodations | Religious        | <ul style="list-style-type: none"> <li>A: “..., for religious reasons wanting accommodations”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  |                            | Celiac           | <ul style="list-style-type: none"> <li>A: ““he was diagnosed two weeks before coming to our institution with celiac disease as well”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  |                            | Other Medical Dx | <ul style="list-style-type: none"> <li>“I have some students who have Crohn’s, IBS, I have one student who has an ostomy bag”</li> <li>“we have a student who has a broken jaw, and the jaw’s wired shut.”</li> <li>“a parent had brought documentation from a naturopath... And part of that recommendation was that we provide all organic food to the student.”</li> <li>“And we had to kinda go to the family and the, the student and say, you know, “We understand that you really believe this. We’re not questioning that this is your belief. We want to work with you. We don’t feel that we can deal with this a hundred percent but, you know, let’s talk about what we can do halfway or, you know, how we can meet in the middle on this.” And what we ended up doing for...the time that that student was on the residential meal plan was, we provided organic eggs...I don’t remember if it was exactly organic or if we called it or if it</li> </ul> |

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|  |                         |  | <p>was, we found an all-natural salmon and an all-natural chicken. And then the parents supplemented with the stuff that the student could have. And we, and we allowed them to...the mother was making some foods and packaging it and bringing it in, and we allowed her to store that in the freezer in the allergy kitchen so that the student could just come in and microwave it and take it. Whereas, that's not something that we normally do. I would, it was, it was an exception because normally I'd tell students, it's like, "OK, this is, this allergy kitchen has to be a safe space. You're not allowed to bring your own food in. You're not allowed to bring in another person." And I actually make the students sign a responsibility agreement that they understand that it's a shared space for other people who have other issues that they may not be aware of, so everybody has to respect the space and keep it safe."</p> <ul style="list-style-type: none"> <li>• "I have a couple who can't have any fresh fruits or vegetables. Everything has to be cooked."</li> </ul> |
|  | Qualification decisions |  | <ul style="list-style-type: none"> <li>• B: "I think it's just the, the four of us getting together and saying, "Hey, what do you think about this guy or this girl? Did you talk to them? What do you think? Do you think it's severe enough that they need a special room?" It's kind of like, you know, goin' back and forth."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|  |                      |  | <ul style="list-style-type: none"> <li>• B: “There’s the Office of Disabilities person, myself, the resident from, two, usually two from Residence Life come.”</li> <li>• F: “We get some...just absolutely crazy requests... that have no basis in science, and it’s not, and usually those are not allergies.</li> <li>• F: They’re like, “I can only eat a, you know, probiotic, this-that-and-the-other-thing diet for this reason,” and it’s just <i>completely</i> crazy.</li> <li>• F: “In that case, I will educate ‘cause that’s another large part of my job is education.”</li> <li>• F: “I’ll educate on what they <i>need</i> to do and we’ll try elimination diets and different things for them, so that way they’re still able to be accommodated”</li> <li>• G: “Well...if a student calls me and they say they have a peanut allergy, then I’ll qualify, qualify them.”</li> <li>• I: “And if [students] have not turned in anything, then the resource center does not ask us for accommodations.”</li> </ul> |
|  | Unwarranted requests |  | <ul style="list-style-type: none"> <li>• B: “I mean, do they have a doctor’s note? Do they, you know, is the parent really pushing for it? Or, you know, like ‘cause sometimes students are like, “Oh, I don’t want a meal plan and, you know, I just wanna cook my own food.” And they have nothin’ wrong with them. Well, sorry, you’re not getting that. You know what I mean?”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|  | Communication with nutrition coordinator/foodservice |  | <ul style="list-style-type: none"> <li>• A: "...normally it's just a verbal communication that I have with the student."</li> <li>• C: "Student come to us and if they identify saying I have a food allergy or sensitivity... then we just talk to them about what we can do to accommodate"</li> <li>• F: ". If they come to me and...their allergies or intolerances or sensitivities are medically necessary...then we accommodate."</li> <li>• J: "It's only to the students who have met with me and are in the program."</li> <li>• K: "Otherwise, they would just contact me as the dietitian, meet with me in my office, and then we would build a plan based on their specific need."</li> </ul>                      |
|  | Required documentation                               |  | <ul style="list-style-type: none"> <li>• A: "We usually require some type of doctor's note letting us know what exactly the diet that they prescribe is and what the condition that they're being treated for."</li> <li>• B: "Usually a doctor's note is typically the thing that we look for."</li> <li>• D: They don't have to go to the Disability Center and, and declare it. We're still gonna work with them."</li> <li>• D: And if it's very complicated, we'll ask for a doctor's statement. But we don't <i>have</i> to have a doctor's statement to work with them."</li> <li>• E: "It's just their request. We don't have any formal doctor notes or anything that we request. No formal doctor notes or</li> </ul> |

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|  |  |  | <p>anything that we request. It's just student's own request."</p> <ul style="list-style-type: none"> <li>• F: "we don't require medical documentation"</li> <li>• F: "if a student self-identifies as having a food allergy, then we treat it as though it were medically necessary."</li> <li>• G: "We do ask for medical documentation, but I don't always, follow-up with it because if somebody tells me they have a peanut or a tree nut allergy, I'm gonna believe them."</li> <li>• G: "Most of the time, I actually just request a note from their, their medical doctor. And the medical doctor, what the note says is, "The student is allergic to peanuts and tree nuts. They need to avoid this, this, and this." And if we get a note from the doctor indicating what they need to avoid, if it's really involved, the doctor also needs to indicate what they can have. "</li> <li>• G: "Form on our housing website that they would go in and fill out"</li> <li>• H: "when the school actually follows the ADA practice and does that, that's when the, the medical documentation comes into effect."</li> <li>• H: "There's a form that they have to fill out in regards to...in regards to what the accommodations are that they need."</li> <li>• I: "medical documentation, I know, is part of it—a large part of it."</li> </ul> |
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|  |  |  | <ul style="list-style-type: none"> <li>• I: “We do <b>not</b> take the medical documentation here.”</li> <li>• I: “I know that it’s something, there’s a, a letter from the doctor describing what happens to the person. There’s a...the test results showing proof that the person is allergic, food allergic. And...I think there’s something else, but I’m not sure what it is. I know those are two of the big pieces”</li> <li>• I: “Because sometimes they just bring a letter that says, “This person needs to not be around...catfish. And that’s not a, that’s not adequate. It has to be detailed”</li> <li>• J: When asked about medical documentation: “You know, no. We’re really pretty lenient...”</li> <li>• K: “we just formed a document that basically describes what the student deals with based on their medical condition.</li> <li>• K: “So basically, just an overall information form of their typical needs, their daily needs, daily living, food preferences, food dislikes.”</li> <li>• K: “And then if they actually have a medical condition or they claim to have a medical condition associated with food, we require an actual medical documentation from a long-term medical doctor that has been providing care for more than four months.”</li> <li>• K: “So if someone came to me and told me they had celiac disease and they were just diagnosed, then I would have to have the</li> </ul> |
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|                         |                  |  | documentation proving that before we moved forward.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Policies and Procedures | No formal policy |  | <ul style="list-style-type: none"> <li>• B: When asked whether formal policy exists: “No, not really.”</li> <li>• C: <i>From conversation, get this but no exact mention of this.....E</i></li> <li>• E: <i>Understood no formal policy; not explicitly addressed.</i></li> <li>• J: “Not in an official way that is sanctioned by the college.”</li> <li>• J: “the culture of our college has a, has a bit of a difficulty with writing down policies and procedures and...getting them through...for whatever reason. I don’t really know.”</li> <li>• J: “But I, when I first got there, I approached the legal counsel with regard to...kind of standard disclaimer to put one on the website when we put the nutritional information on, and they really just kind of said... “You just put what you think is right. We don’t really want this to go through our legal counsel.”</li> <li>• J: “And...I, I know that they are currently in the works, working on updating and improving policies and procedures, you know, from an employment standpoint so I think that...it’s probably just...one of those systematic...things that is a little bit weaker than it should be and it hasn’t filtered down to our area yet. But I have, I have written out for myself...”</li> </ul> |

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|  |                |                     | <ul style="list-style-type: none"> <li>• K: “Those policies are being established right now, so we don’t have anything formal in writing at this time.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  | Formal policy  |                     | <ul style="list-style-type: none"> <li>• A: <i>Policy exists</i></li> <li>• D: “The who, what, when, where, why, how.”</li> <li>• F: “We do” (<i>in response to wheter formal policy in place</i>)</li> <li>• G: “We do... we are in the process of revamping those based on some new data...”</li> <li>• G: And then it goes to Risk Management, and then it’s approved... We have an assistant director, and the director, and the assistant to the director [involved in revising policy].”</li> <li>• H: <i>policy exists</i></li> <li>• I: “Yes...”</li> <li>• I: “We have our general foodservice policy, and then each place has their procedures”</li> <li>• I: “Every place will still have their procedures, but this way the foodservice director has them.”</li> </ul> |
|  | Policy Content | General information | <ul style="list-style-type: none"> <li>• G: “It talks about what we do, accommodations, how we follow the ADA’s guidelines...our policy on having to have a meal plan.”</li> <li>• G: “If you have a special diet, this is what we do for you and who to call, that type of thing.”</li> <li>• G: “It’s written in the formal document that says OK, we, we have the policy and then</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                    |



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|  |            |                | <p>kind of like, this is an objective to the policy; this is part of what we do and training and that piece, but not in the general policy”</p> <ul style="list-style-type: none"> <li>• H: “a lot of the other things that are pretty standard come from corporate.”</li> </ul>                                                                                                                                                                                                                              |
|  |            | Emergency plan | <ul style="list-style-type: none"> <li>• F: “What to do if someone ingests something that they should, like if there’s a peanut allergy and they eat a peanut, it goes through those processes.”</li> <li>• H: “there’s steps and procedures that are in place to make sure that they’re safe and taken care of.”</li> </ul>                                                                                                                                                                                  |
|  |            | Contact person | <ul style="list-style-type: none"> <li>• A: “..there’s a specific section on individuals that have food allergies or need special accommodations, that they actually have to contact my office upon arrival or before they come to the university”</li> <li>• D: “who to contact”</li> <li>• G: “....and who to call”</li> </ul>                                                                                                                                                                              |
|  | Policy Age |                | <ul style="list-style-type: none"> <li>• D: “only a couple of years”</li> <li>• F: “Probably ten years” (length of time in place)</li> <li>• G: “There’s always been a policy, but the most recent one that we really put in place has been about a year and a half, with stronger wording, you know, more understanding, that type of thing.”</li> <li>• I: “the actual written policies have been in, in place for four years, But we were making accommodations <i>way</i> before any of that.”</li> </ul> |

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|  | Policy development | Development process | <ul style="list-style-type: none"> <li>• A: “Written by executive director of dining services, and director of culinary operations”</li> <li>• D: “And with development of the specific policies. What we did was we found another college university that we thought was doing well as a benchmark, and we stole a lot of their information.</li> <li>• D: We copied them.”</li> <li>• F: “We’re in the process of revision, so I play a much larger role in that.”</li> <li>• F: [created by] “The registered dietitian at the time.”</li> <li>• F: “And then they were approved by the director.”</li> <li>• G: “I create them. And then revise them. But we have...a couple people in this department that also help with the wording”</li> <li>• H: “I work for a management company, so they initiated our systems a year ago.</li> <li>• H: “we had to have it in full effect last year’s line, so I think it was a year, no, prior to that, so what are we talkin’? Two-thousand-thirteen? So we had, we spent the better part of four months taking the systems they put in place and applying them to our operations.”</li> <li>• H: “as a management company, we do everything from nursing homes where they’ve been dealin’ with allergens since the beginning of time as a, as a dietary-type concern, all the way to BNIs where they</li> </ul> |
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|  |  |  | <p>don't understand the need for it. So, we have to...we have to make our general corporate policy somewhat flexible so that they can, we can make it fit, whichever model that we're overseeing. So, that's part of it."</p> <ul style="list-style-type: none"> <li>• I: "We're in the process of...pulling all of that under a single book right now."</li> <li>• I: "So now what I'm working on is a food allergy action plan that puts everything together in one place so it's easier to review."</li> <li>• I: "I wrote some of them, and then I presented them to our, to the other managers and directors in managers' meeting. Discussed them, then went to the, of course, the foodservice director and it went to the housing and foodservice director. And then they went to our vice president, and then they went to...legal counsel."</li> <li>• I: "And any changes or anything that had to be made within there, to make sure that we meet all of, of the criteria that they have, all of that happened before anything was ever posted."</li> <li>• J: "I know that [policies] are currently in the works, working on updating and improving policies and procedures, from an employment standpoint so I think that...it's probably just...one of those systematic...things that is a little bit</li> </ul> |
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|  |  |                                 | <p>weaker than it should be and it hasn't filtered down to our area yet.”</p> <ul style="list-style-type: none"> <li>• K: “We kinda are at the drawing board and have things that are being created, and those steps have to go through legal facility support in some way, and that's, that's <i>really</i> not my expertise. I kinda hand that over to our director, so basically an outline is what we have right now.”</li> </ul>                                                                                                                                                                                                      |
|  |  | Changes since developed         | <ul style="list-style-type: none"> <li>• I: “We've had maybe...two people...that we have not been able to accommodate because of, of having something in place that...”</li> <li>• I: “I guess you can say forces people to...meet the accommodations instead of having...this place has this, this place has that. We have a basic that everybody has to do. And the thing that changes in the procedures is just within that operation, but as for making the accommodation, because we have it in writing and we, we have the policies in place, then everyone understands that they <i>have</i> to make the accommodation.”</li> </ul> |
|  |  | Development (revision) catalyst | <ul style="list-style-type: none"> <li>• A: “They had gone to an allergen conference, and they saw the need because they were getting contacted by students, and they realized we need this position.”</li> <li>• F: “We're mostly just updating them. I, they haven't really been looked at since, since they were created ten years ago. And so, allergies are more prevalent. We know more now. A lot of the material is just</li> </ul>                                                                                                                                                                                                |

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|          |  |  | <p>outdated, like how you deal with certain things, and so it, we're just updating everything."</p> <ul style="list-style-type: none"> <li>• G: "Yeah, there's definitely been a change with...what I believe is the university itself, Risk Management, has seen that, how important it is with regards to food allergies, to have policies in place."</li> <li>• H: " , it was on our to-do list like to update 'cause they had a system in place for identifying allergens and stuff like that 'cause they've always been around, but it's never been as formalized."</li> <li>• H: "So we, we're slowly improving and trying to develop that as we found time. But it had to be, you know, around all the other responsibilities that we had, whereas when we told the institution about the ADA compliance coming and stuff like that..."</li> </ul> |
| Training |  |  | <ul style="list-style-type: none"> <li>• A: "we have a special training put in place for all of our staff that works in our facility."</li> <li>• A: "both our residential dining facilities as well as all of our retail locations on campus, have the training and the ability to give students an allergen-free meal if needed."</li> <li>• E: "Nobody has any formal training"<br/>Clarified via e-mail: E: "As for allergy training we have a PowerPoint that all of our staff and student workers go through once a year to explain allergens and how they are relevant in serving students. It also</li> </ul>                                                                                                                                                                                                                                     |

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|  |                                                                             |  | <p>covers who they should call if there is an allergy emergency.”</p> <ul style="list-style-type: none"> <li>• G: “We have done a ton of training”</li> <li>• G: “No, this is part of what we do and training and that piece, but not in the general policy”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  | Contract company involvement                                                |  | <ul style="list-style-type: none"> <li>• H: “everyone in our corporation went to that training. And then, we have to submit to our regional directors what our training plan is moving forward. There’s some guidelines in regards to what we have to do and how often. We just have to let them know when we’re doing it. And so, like I said, at our locations annually, we typically do it in June. And then anytime any new employee comes in, they get a...get a version of it.”</li> <li>• H: “we had a general corporate training that all employees had to attend in...let’s see, we’re two-thousand-fifteen, so two-thousand-thirteen. So really it was...a little less than a year ahead of the actual ADA law going into, into effect.”</li> </ul> |
|  | Content (e.g. cross contact prevention, overview FA, food allergy specific) |  | <ul style="list-style-type: none"> <li>• A: “But the training that our staff goes through, we actually have all of our dishes and utensils and everything that we utilize in our allergen-friendly station is purple”</li> <li>• C: “we tried to have some specific training for food allergies.”</li> <li>• C: “the other half that I talked about with the students was about, specifically about food allergy accommodation and knowledge.”</li> </ul>                                                                                                                                                                                                                                                                                                     |

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|  |  |  | <ul style="list-style-type: none"> <li>• G: "...how to avoid cross-contact"</li> <li>• G: "what to do in emergency situations"</li> <li>• G: "who do you need to go to."</li> <li>• H: "Student employees get an abbreviated version of it, but they're aware of how it works and what our notifications are and what our symbols mean and all that kinda stuff"</li> <li>• H: "the biggest thing that I think is the training commun-, communication portion of it"</li> <li>• H: "we go through just the general, "What is an allergen? What does it mean to be an allergen? Where does it come from?" And just give 'em the general information so they have an understanding of it 'cause, 'cause if you've never had a food allergen and it's not something you're conscious of, you don't have a family member that has it, it's not something you really think about"</li> <li>• H: "We also talk about what our procedures is if someone does happen to have a reaction."</li> <li>• H: "I mean, for their safety, we also talk about our labeling system. We talk about how it's labeled, not only on the signs out front, but on our production menus and our prep list all the way back to the recipes."</li> <li>• H: "We talk about the process to, how we identify where the allergens are in the recipes because we want them to understand how much work it is because</li> </ul> |
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|  |                      |  | <p>we get chefs in, especially out of the commercial world.”</p> <ul style="list-style-type: none"> <li>• H: “We identify the eight primary allergens”</li> <li>• H: “...website we make sure that we say that any food that contains protein, you can be allergic to”</li> <li>• J: “The training has a post-test to make sure that they understand it”</li> <li>• K: “And the Purple Program, that’s what’s called our allergy program, and those people will go through the basic element information of keeping allergic students safe on campus based on changing their gloves, cleaning utensils, cleaning the surface”</li> <li>• K: “how to refer them to the dietitian to keep them safe as well.”</li> <li>• K: “And then we go through employee...not necessarily certification, but employee trainings on how to implement food safety with allergens.”</li> <li>• K: “And then we do a quick training on prepping, keeping those items safe and clean from cross-contamination, and then actually helping the staff member to remember it’s all about the choices that the student requests.”</li> </ul> |
|  | Appeal to compassion |  | <ul style="list-style-type: none"> <li>• A: “a video of how an individual with food allergies feels when they eat out or how they feel when they’re invited to social events because food is a very social thing.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



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|  |                  |  | <ul style="list-style-type: none"> <li>D: ““And she was so good because one of her children has a <i>severe</i> allergy. But she could pick up an allergy by petting a dog who had eaten a dog treat that contained peanuts.” – [effectiveness of presenter r/t appeal to compassion]</li> </ul>                                                                                                                                                                                                                                                                                                |
|  | Who led training |  | <ul style="list-style-type: none"> <li>B: “And this year I did the whole thing myself ‘cause I, I did my thesis on food allergies and cross-contamination”</li> <li>F: “I do provide allergen training to both the residential side and the retail side of...so the residential kitchen and the retail kitchen.”</li> <li>H: “As far as like overseeing the overall process, I’ve assigned it to one of, I have two managers that work underneath me—one manager that is in charge of maintaining the logs, updating things</li> <li>K: “I did one of those trainings this morning.”</li> </ul> |
|  | ServSafe course  |  | <ul style="list-style-type: none"> <li>B: “And then the ones that actually work the, the station, that particular station, they get even more training. They have to do like ServSafe online for allergen training.”</li> <li>C: “Student employees and regular non-student employees were just given the basic training, having the California food handler’s test or ServSafe test.”</li> <li>C: “it was also for food safety. So, half those, the beginning part of the training was, that was related to ServSafe material.”</li> <li>F: “And everyone is ServSafe certified”</li> </ul>    |

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|  | Frequency of training/Timing |  | <ul style="list-style-type: none"> <li>• B: "It's once a year."</li> <li>• B: "And if the new chef comes in to take over that station, then they get, also have to go through this training."</li> <li>• D: "So, it <i>needs</i> to happen at least once a year..."</li> <li>• F: "Twice a year. Like summer and winter breaks."</li> <li>• G: "It's been offered for probably eight years."</li> <li>• G: "And we do it once a year..."</li> <li>• G: "we do it twice a year for new staff."</li> <li>• H: "We do allergen training annually, so it's a general training but then we also do any updates that are involved in that.."</li> <li>• H: "any new employee that comes in, part of their orientation package is an introduction to our allergen program."</li> <li>• H: "they do a week training with another employee and the supervisor on the shift they're going to be working on, they're introduced to all of our, our system and how to access it"</li> <li>• H: "And it's done annually every summer when we have time to get everybody together to do it."</li> <li>• H: "we had a general corporate training that all employees had to attend in...let's see, we're two-thousand-fifteen, so two-thousand-thirteen"</li> <li>• J: "they have been trained annually from, for...since two-thousand-three when the program started."</li> </ul> |
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|  |                 |  | <ul style="list-style-type: none"> <li>• J: “And last year when the Lesley ruling, you know, became widely talked about, we changed and we started doing training twice a year”</li> <li>• K: “Started summer of twenty-fourteen. “</li> <li>• K: “we do that training upon...upon hiring”</li> <li>• “And those individuals have to go through a new employee hiring training.’</li> <li>• K: “And then on top of that, we have break...each break, typically during the summer and the winter breaks, we have a new food allergy meeting.</li> </ul>                                                                                                                                                                         |
|  | Reinforcement   |  | <ul style="list-style-type: none"> <li>• B: “Correct. Yeah, and they, there’s always me and the executive chef walkin’ around makin’ sure everything’s OK.”</li> <li>• G: “anybody who...any manager or supervisor who feels someone needs a refresher, they go through it.”</li> <li>• G: “We have an online one too, so if a refresher is needed, we send them to the, we have an online PowerPoint food allergy training that they can go to. They, they read through it, then they sign electronically that they’ve read it. And that’s mainly for refreshers.”</li> <li>• K: “And then we retrain them again each semester or each summer on the importance of some of the new things we’re seeing on campus.”</li> </ul> |
|  | Target audience |  | <ul style="list-style-type: none"> <li>• B: “There was about five hundred employees that I gave this to. Everybody. So everybody from the like retail operations to the coffee shop people to the</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|  |  |  | <p>chefs to the bakery people. Everybody gets all that information.”</p> <ul style="list-style-type: none"> <li>• D: “a half-day training with all of our management administrative staff”</li> <li>• D: “with all of our full-time staff, did about a forty-five minute training session.</li> <li>• F: “we employ a lot of students, as well. That’s, it’s also included in the all-student handbooks. And everyone is ServSafe certified, and our students go through it.”</li> <li>• F: “Usually employees go through a different, like tailored...program, and that’s all outlined in the policy.”</li> <li>• G: “...for all staff”</li> <li>• G: “Our student employees, our student supervisors.”</li> <li>• H: “training is from the bottom up. Everybody gets it.”</li> <li>• H: “But, I mean, everybody goes through that. [training]”</li> <li>• H: “any new employee that comes in, part of their orientation package is an introduction to our allergen program.”</li> <li>• H: “From dishwasher on up. Student employees get an abbreviated version of it, but they’re aware...”</li> <li>• I: “everyone goes to the food allergy training.”</li> <li>• J: “<i>all</i> dining staff is required to attend the training.”</li> <li>• J: “we also train all of the student captains, so our student employees get trained as well.”</li> </ul> |
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|                       |                                                       |  | <ul style="list-style-type: none"> <li>• K: “whether it is foodservice facility, management, staff, temporary worker, student workers”</li> <li>• K: “Each facility manager has to come to the in-service allergy training, and we go back and do those actual in-services in the facility as well”</li> <li>• K: “. So every facility is required to go through an allergy training with the dietitian, which we basically try to do it in large groups to save time and effort. But then we have one-on-one trainings.”</li> </ul>                                                                                                                                                        |
|                       | AllerTrain (FARE)                                     |  | <ul style="list-style-type: none"> <li>• D: “And AllerTrain.”</li> <li>• D: “...the trainer came to our campus, did a half-day training with all of our management administrative staff and including a, a test on it.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Accommodation efforts | Intra- inter-departmental communication/collaboration |  | <ul style="list-style-type: none"> <li>• D: “We had the responsibility of connecting with the Disability Center.”</li> <li>• G: “And when students fill out applications—whether it’s Health Services or Housing applications—they may put on the application that they have a food allergy. So what they do is they, in turn, go back to the student and give them my contact information so then they’ll call me directly for accommodations.</li> <li>• G: “And when it gets to the point where it’s [medical documentation] getting very specific, that’s when we get Health Service’s medical director involved and then, <i>he</i> himself may request other information.”</li> </ul> |

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|  |  |  | <ul style="list-style-type: none"> <li>• G: “There’s a form on our Housing website that they would go in and fill out... And, yeah, and then that’s how it would kick out over to me and then we would say, “OK, could you get medical documentation?”</li> <li>• G: “But we do [have a policy], and we’ve actually filed that with our Risk Management Department</li> <li>• G: So about a year and a half, there’s been a pretty good, strong policy that was actually, we just sent it to Disability Services to look over so, will have looked at it within the university.”</li> <li>• I: “And if someone comes to my office and generally they come talk to me after they’ve talked to them or we do it together, but if they come to my office and say, “Well, I’m allergic to...,” then I direct them to the resource center because I explain to them all the medical documentation goes there.”</li> <li>• I: “We do <i>not</i> take the medical documentation here.”</li> <li>• J “presentation to our Student Life staff on campus to try to help them kinda get their heads around what, what this involves and what is available because I occasionally hear from students that, you know, “Great! I’m a freshman and they’re having an ice cream social, but I’m allergic to milk.” Or, you know, “Great! They’re having a pizza party, and I’m gluten free.”</li> </ul> |
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|  |                                                                               |                              | <ul style="list-style-type: none"> <li>J: “So, trying to get ahead of those things so that I don’t hear about it after the fact and letting the, the RAs and the people who manage the buildings know that there are other options.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | Information dissemination – to students/customers (as compared to employees?) | Within foodservice operation | <ul style="list-style-type: none"> <li>G: “We have a plaque hanging in all of our facilities that indicates if you have a food allergy, who to call, what to do.”</li> <li>G: “We try to hit ‘em any way we can.”</li> <li>H: “It’s handled completely out of my office..”</li> <li>H: “We do a bulletin board series each semester, or not series, just a bulletin board each semester just reminding everybody about what everything means ‘cause we’ve got these funny little stickers on everything with cute little pictures”</li> <li>H: “We do a bulletin board series each semester, or not series, just a bulletin board each semester just reminding everybody about what everything means ‘cause we’ve got these funny little stickers on everything with cute little pictures but it’s more than that.”</li> </ul> |
|  |                                                                               | Orientation and recruitment  | <ul style="list-style-type: none"> <li>A: “We, during our orientation and then all recruitment sessions that we have, we send out information.”</li> <li>D: “We do the same thing when we’re talking with parents”</li> <li>C: We encourage students at orientation, if they have any food allergies/food sensitives, to come talk to us</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|  |  |          | <ul style="list-style-type: none"> <li>• E: “And we do one informative session ‘cause it’s like the, I think the day before classes start, there’s a whole bunch of orientation sessions... And we have one that they can choose on their list to come to to talk about us with allergies.”</li> <li>• G: “We have tables at all the new freshmen and accepted freshmen days.”</li> <li>• J: “. I attend the... open houses and orientations... so, the process of a student kind of walking through the process of whether or not they’re attending and then after they decide to attend, there’s all these events.</li> <li>• J: “And so I’m there, accessible, have a table and brochures and information. I usually set up a computer with links to the website so I can kind of demonstrate how to find the nutrition information and so on.</li> <li>• J: “I have frequently been approached by people who were just thinking about coming to the school—either the parents or the students. And they call me up, and I make an appointment. They come and meet with me, and I tell them all about the program and they kind of factor that into their decision.”</li> </ul> |
|  |  | Brochure | <ul style="list-style-type: none"> <li>• A: “There’s an informational brochure that goes out that’s specific to the allergen-friendly station and how it works. It also has the top ten questions that I get from students and parents when they come to</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



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|  |  |              | <p>college. It also lists the menu items we have. So usually brochures.”</p> <ul style="list-style-type: none"> <li>• D: “We put the information in our brochures...”</li> <li>• G: “Any freshman who is accepted, they get a welcome packet from the university and in it has all the information about foodservices and special diets.”</li> <li>• G: “We have table tents that we put out in all of our dining centers, and it’s, that indicates you have a food allergy, or if you have any questions about this, who to contact.”</li> </ul> |
|  |  | Social media | <ul style="list-style-type: none"> <li>• A: “We’ll do short videos posted to our Facebook or Twitter. We’ll send out pictures.”</li> <li>• H: “It’s part of our Facebook page, which I think is where most [laugh] students get their information.”</li> </ul>                                                                                                                                                                                                                                                                                    |
|  |  | E-mails      | <ul style="list-style-type: none"> <li>• A: “I send out emails to all the students that have come to see me that I kind of work with...I send them out like a monthly email with the menu to let them know of any changes or if we have any new products and then also ask for suggestions that, you know, of products or things that they like or miss and would like to see on the menu.”</li> </ul>                                                                                                                                            |
|  |  | Website      | <ul style="list-style-type: none"> <li>• B: “Everything is online.”</li> <li>• D: “We put the information ... on our website saying if there’s a special dietary need to let us know.</li> <li>• D: “And really, a <b>big</b> help to us was when we got [software] on our website.”</li> </ul>                                                                                                                                                                                                                                                   |

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|  |  |  | <ul style="list-style-type: none"> <li>• D: “Yes. Because students can click on the allergens, and then it’ll remove those items from the menu.”</li> <li>• D: “And then, on our website we have: “You may find the most common food allergens and restricted foods listed on the right side of the page. Click the allergens you need to avoid. Items containing the allergens and foods will be deleted from your choices. Please note: While you can use [software] to help you identify food allergies as you dine in our locations, if you have experienced severe allergic reactions in the past, we encourage you to talk with a member of the management team for specific questions or concerns. All are willing and happy to assist you.”</li> <li>• E: “Our main one [way college conveys info about accommodations] is probably right on our website”</li> <li>• G: “We have our website.”</li> <li>• H: “. But as far as any marketing or information beyond that point, it comes outta my office. So it’s on the web.”</li> <li>• I: “they have specific criteria on the website before the students get here that they can look at” [r/t accommodation qualifications]</li> <li>• I: “On our website...we have...some information there.”</li> <li>• J: “All of the nutritional information, the full listing of ingredients is available</li> </ul> |
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|  |  |                     | <p>through our, our mobile...mobile-friendly website.”</p> <ul style="list-style-type: none"> <li>• J: “it’s directly linked to our database where I write the recipes and all of the nutritional information is stored, so it’s real-time”</li> <li>• J: “If I change a, a recipe or if I put something up because the, our supplier, you know, substituted or, or an item isn’t available, I’m able to change it and within an hour it will update on the, on the website.”</li> <li>• J: “I always advise the students to check our online mobile site for the, for the latest ingredients.”</li> <li>• J: “we have it on our, on the Dining website.”</li> <li>• J: “We have it on the Health Services website.”</li> </ul> |
|  |  | Admissions office   | <ul style="list-style-type: none"> <li>• B: “I know a lot of the, like the Office of Disabilities and Admissions knows that if any, if they have any questions they can always contact me, and they have my information to hand out.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  |  | Disabilities office | <ul style="list-style-type: none"> <li>• D: “there’s the Disability Center website.”</li> <li>• E: “Maybe one or two instances where somebody’s gone through them (disabilities dept) and needed accommodations with us”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  |  | Menus               | <ul style="list-style-type: none"> <li>• E: “if you enter into our main dining facility, we have, I call it like our nutrition key, that lists, that shows the symbols for all of the allergens and what you’re gonna see on the menu.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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|  |  |                       | <ul style="list-style-type: none"> <li>• E: “that’s at the entrance to our main dining hall and at the exit and at each of the four individual stations.”</li> <li>• E: “And then we’re also flagging those [allergens] on the visual menu for people to see.”</li> <li>• H: “for non-enrolled students, like camps and conferences season, we actually pre-publish all of our menus for camps and conferences and send it out to the coaches or the organizers of the camps, and encourage them to have any parents contact us. And a lotta times what happens is we will meet the parent when they bring their son or daughter in for check in to review what we have available to other students to make sure that they, they are able to, excuse me, able to, to eat and, you know, be happy and safe.”</li> <li>• J: “We have electronic signs with the top allergens posted at the stations, at the, at the point of service.”</li> </ul> |
|  |  | Word of mouth         | <ul style="list-style-type: none"> <li>• B: “So, I mean, I get calls all the time so some-, somebody’s tellin’ somebody.”</li> <li>• J: “I am available to <b>all</b> students, <b>all</b> the time. I mean, they can, any student on campus can make an appointment with me for any reason.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  |  | Other - dissemination | <ul style="list-style-type: none"> <li>• I: “And on campus itself, I actually go out...oh, several times throughout each semester, and do informational tables where I’m talking to the students and I’m showing them information.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|  |  |  | <ul style="list-style-type: none"> <li>• I: “We do a food allergy awareness month just to make them aware that, yes, this could happen to you. And if it does, this is what, you know, we’re here to help.”</li> <li>• I: “I get a lotta phone calls from parents who are...but that’s on our website. Mine is listed. I think they list it as Ingredient Specialist. And it has <i>my</i> contact information, if they have food allergies, so that they contact me. That’s on our foodservices website. And then I can help them get to the other places that they need to get to.”</li> <li>• J: “I reach out to the Admissions Department and I’ve provided training materials and I’ve gone to speak to the orientation leaders sometimes and the tour guides so that when they, so that those people who, you know, have more contact with the incoming students...they know about us.</li> <li>• J: “I’ve tried to...get the word out there, as far as...bringing more awareness to the campus. And I actually have...I have scheduled next month...I gave a, co-presented at a National Association of Student Affairs Professionals—NASPA—with a, with a dean from another college, a dean of student affairs from another college. And, and we’re gonna give that presentation...”</li> <li>• J: “So, trying to get ahead of those things so that I don’t hear about it after the fact</li> </ul> |
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|                                        |                                      |  | <p>and letting the, the RAs and the people who manage the buildings know that there are other options.”</p> <ul style="list-style-type: none"> <li>• K: “. I created multiple documents that are laminated and posted throughout the facility. And those...it depends on the management at the location, the dining location, and how that’s implemented.”</li> <li>• K: “So in the back of the house, there’s instructions on how to keep allergen students safe. There are many posters with different terminology that quick remembering acronyms that will help them in case they haven’t had an allergy student in a while, then they can recall a simple acronym to help them go through the process of how to keep them safe.”</li> </ul> |
| Accommodation efforts w/in foodservice | Individualized menu/special products |  | <ul style="list-style-type: none"> <li>• A: “...they can go and create that food item for that individual.”</li> <li>• H: “We do offer some things that are allergen free that are, like ingredients that are allergen free. We have, for instance, gluten-free pizzas. They come in individually sealed packages. They’re provided to the student that way. They cook it themselves. It’s, you know, it, so that there’s no chance for cross-contamination, at least from, as far as we’re handling it.”</li> <li>• J: <i>Re students with multiple allergies</i>: “their food choices are very limited. And so I find out what, what foods that they would like to supplement, what’s, what is available to</li> </ul>                         |

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|  |  |  | <p>them in the regular dining area. And then I actually just stop at the store and pick them up so I have soy yogurt and soy cheese and gluten-free tamari and stuff like that...and soy nut butter.”</p> <ul style="list-style-type: none"> <li>• J: “they can order a meal from the residential dining hall. And they have the option of either having us, if they can tell us what time they wanna pick it up, we will keep it warm for them.”</li> <li>• J: “If they prefer, we can wrap it up and put in the refrigerator, and they can heat it up at their leisure. Or we will wrap it up for take-out so they can just come down and pick it up and take it to another location.”</li> <li>• J: “there’s a, there’s a listing of kinda standard items, kind of as a suggestion to them. And then I also kinda tell them, “Well, you know, if you see something on our regular menu that you know we could make for you very easily if we just left out this one item, if you let us know, we’ll try to accommodate that.” So in order to give them more variety other than just kinda sticking with their same fallback simple things that they, they tend to do.”</li> <li>• J: “But right now, the special order really applies to the students who have a lot of restrictions because we do have a lot of foods that are readily available to, to most students with food allergies</li> </ul> |
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|  |                            |                  | <ul style="list-style-type: none"> <li>• K: “to make sure we have typical products like gluten-free breads or alternatives to such.”</li> </ul>                                                                                                                                                                                                                                     |
|  | Expectations of students   |                  | <ul style="list-style-type: none"> <li>• H: “. If someone actually has a medical diagnosis with allergens and it’s, it’s at a level where they need to have an EpiPen, I do have one student currently that, that has. They’re required to carry it with ‘em all, at all time. It’s part of their agreement with the university.”</li> </ul>                                        |
|  | Monitoring/program control | Control measures | <ul style="list-style-type: none"> <li>• H: “We review all of our standard recipes that don’t change, twice a year”</li> <li>• I: And if [the foodservice director] sends someone out to check an operation, go in and order a sandwich and tell ‘em that you’re allergic to cheese or dairy, and then they can evaluate what happens.</li> </ul>                                   |
|  |                            | None             | <ul style="list-style-type: none"> <li>• F: “So there’s no... alienation. There’s no, “You have to call ahead.” There’s no, “Oh, you can’t have, you know, gluten. We’ve gotta make you something completely different.”</li> <li>• H: “it is a hundred percent based on them making their own selection. We don’t prepare any allergen-free meals here.”</li> </ul>                |
|  | Foodservice personnel      | People involved  | <ul style="list-style-type: none"> <li>• A: “we’re aware of their needs, and we can make sure that we put them in touch with the correct chefs and they know the station that, you know, is safe for them and they’ve met everybody and...so we can put a face to a name.”</li> <li>• E: “starts with the sous chefs because they’re the ones that are in control of the</li> </ul> |



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|  |  |  | <p>kitchen staff. And then it's gonna trickle down to our...our line cooks at each individual station."</p> <ul style="list-style-type: none"> <li>• B: "Chefs, supervisors, employees, executive chefs, manager, myself. Pretty much anybody that comes in contact with the student."</li> <li>• D: Well...it could be a full-time staff member who gets them connected if somebody, or it could be a cashier"</li> <li>• D: "It could be a student staff member."</li> <li>• D: "Anyone that the customer might interact with during a conversation."</li> <li>• D: "It could be the food preparer."</li> <li>• E: "Operations manager oversees the sous chefs but doesn't individually talk with students"</li> <li>• G: [who is involved in accommodations] "our director of foodservices, all of our assistant directors of foodservices, our managers, our supervisors, our first and second cooks, myself, our purchasing department, our marketing department."</li> <li>• G: "we even have our warehouse staff... who comes in. They're involved with it. Our student employees, our student supervisors."</li> <li>• G: "in foodservices, it'd be every single person has something, has some kind of responsibility."</li> <li>• H: "Self and production manager"</li> </ul> |
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|  |  |                             | <ul style="list-style-type: none"> <li>• J: “they come to me and they get a lot of information and, as you can guess, I usually spend an hour with the student the first time that I, that I see them. I explain to ‘em where to find the nutritional information.”</li> <li>• K: “The first line of defense starts with myself.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                 |
|  |  | Disciplinary Action         | <ul style="list-style-type: none"> <li>• G: “And in our training what we do is, our staff are union. I was able to get the union to approve wording that says, “If you don’t follow the procedures and guidelines put in place for food allergies, and you do something that could harm a student, there will be disciplinary action.”</li> <li>• G: “Like the biggest one, somebody has a recipe and they’re standardized, we follow recipes, and if they decide to put a special ingredient in and it’s gonna taste better, then that’s disciplinary action. Even if somebody does, or if they did something like that, we, and we find out, they will be disciplined as well.”</li> </ul> |
|  |  | Chef/supervisor involvement | <ul style="list-style-type: none"> <li>• A: : “Our executive chefs in our facility, our director of culinary operations, our executive director of Dining Services, myself, and our production chefs for the specific station.”</li> <li>• B: “And if they would ever have a question, they would just either talk to a chef or a supervisor or whoever’s workin’ the line. They, they would know the answer.</li> </ul>                                                                                                                                                                                                                                                                     |

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|  |  |  | <ul style="list-style-type: none"> <li>• C: "...mostly it would just be myself as the nutritionist and the head chef working together."</li> <li>• C: "the supervisor might come in to see what, what we're doing and if we need any assistance."</li> <li>• D: "In most, we want most of that conversation to be between that regis-, the RD and our sous chef and/or the food preparer."</li> <li>• E: "Sous chefs meet individually with people who have allergies"</li> <li>• E: "... starts with the sous chefs because they're the ones that are in control of the kitchen staff."</li> <li>• E: "the sous chefs will get the main information from the student, and then they will introduce the students around if they need to have individual contact with the line cooks to be aware of what their allergies are, I think."</li> <li>• E: "Operations manager oversees the sous chefs but doesn't individually talk with students"</li> <li>• H: "As far as like overseeing the overall process, I've assigned it to one of, I have two managers that work underneath me—one manager that is in charge of maintaining the logs, updating things. We review all of our standard recipes that don't change, twice a year. We also use the...FARE's website..."</li> </ul> |
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|  |  |  | <ul style="list-style-type: none"> <li>• H: “so there’s one manager that oversees that. She has a supervisor that partners with her in regards to her doing that process” [recipe review process]</li> <li>• H: “any time a recipe is changed, sometimes just due to ingredients not coming in or whatever, cook has to let the supervisor know that they’re changing it.”</li> <li>• H: “The supervisor then adjusts the signage, and they let the production manager know in case it’s something they wanna continue, like it tastes better with something or whatever”</li> <li>• I: “That would be myself, ... , the manager of the particular operation, and the director of housing and food. The director of foodservices and the director that’s over that particular area.”</li> <li>• I: “And then with the managers, it’s <i>their</i> responsibility to keep up the training”</li> <li>• I: “Then it’s the manager’s responsibility to make sure that their procedures and their constant update training with the staff does happen.”</li> <li>• I: “director of foodservices, his is the final say-so if we have someone...that needs something outstanding in accommodation. For instance, we had someone that we needed to store in our freezers food for them “</li> <li>• I: “Then that has to get permission from our foodservice director, to make sure</li> </ul> |
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|  |  |                               | <p>there's no hidden liability there that we're not sure of."</p> <ul style="list-style-type: none"> <li>• I: "And if someone comes to my office and generally they come talk to me after they've talked to them (disability) or we do it together, but if they come to my office and say..."</li> <li>• K: "then we would involve management, staff, chefs, and then we would meet as a group with the actual student."</li> <li>• K: "So it could be the general manager of the facility, of the dining facility, their main cook, or other staff members that may have a prominent role, as well as the executive chef on staff."</li> </ul> |
|  |  | Role identification           | <ul style="list-style-type: none"> <li>• A: Nutrition coordinator, though "We have a lotta students that didn't know my role existed."</li> <li>• C: "a lot of the roles that we've taken up, many of them are self-assigned roles."</li> <li>• C: "And I've just been trying to define my own role in the facility in terms of allergy accommodations"</li> <li>• C: "then herself trying to define her own role"</li> <li>• C: "But the roles are still fairly...how do I say...they're, they're still forming as we, as we create these new policies."</li> <li>•</li> </ul>                                                                 |
|  |  | Production manager/purchasers | <ul style="list-style-type: none"> <li>• F: "I work with our production manager and purchasers to make sure we can accommodate whatever combination of</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|  |       |                         | <p>allergies they have or nutrition needs they have.”</p> <ul style="list-style-type: none"> <li>• F: “The production manager was the one that had to actually purchase, like bring in and purchase the products that we started carrying.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  | Menus | Allergen identification | <ul style="list-style-type: none"> <li>• B: “Well, all the foods are labeled so they know exactly what’s in the food.”</li> <li>• C: “... working on going through all of the menus, and then identifying all of the allergens and trying to post those during regular service hours so that the students can identify if they can eat the food or not.”</li> <li>• E: “So I have like symbols that I use for everything. It’s just like letters for everything, so like a dairy is a D and an egg is an E.”</li> <li>• E: “But it’s out there, and it’s everywhere for people to see so when you, we wanted to make it automatic so when you see it on the menu, you’re brain’s gonna automatically think that it’s an allergen up there.”</li> <li>• F: “I went through the menu and...’cause I keep all nutrition information for our entire six-week cycle menu. I went through everything. Every...single recipe, every single ingredient label, and determined what she could and couldn’t eat, highlighted it on our six-week cycle if she could eat it.”</li> </ul> |

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|  |  |  | <ul style="list-style-type: none"> <li>• F: “, regardless of the combination of food allergies, they are able to enter the dining facility and choose what they can eat because of point-of-sale labels with every ingredient listed.”</li> <li>• F: “I...like the way...our institution does things in that everything is labeled...”</li> <li>• H: “All of our menu items are completely available with all the ingredients and everything, and on our menus—both online and at the stations—have labeling that tells them what is contained in the food so that they know that, what’s in it”</li> <li>• H: “we strive to make sure that we’re not introducing any ingredients that are not part of our recipe without letting a supervisor know so that we can adjust all of our noti-, our...our signage and information that’s available to the students.”</li> <li>• H: “The, I think the biggest thing for us that kinda set the standard for everyone else is our wonderful allergen binders. So every ingredient that we use on campus, we have in a binder that’s available...it’s set up for ingredient class and it, there’s one specific to the dining hall, there’s one specific to the ice cream shop, there’s one specific to the, the retail.”</li> <li>• J: “the full listing of ingredients is available through our, our mobile...mobile-friendly website”</li> </ul> |
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|  |  |                          | <ul style="list-style-type: none"> <li>• J: “it’s directly linked to our database where I write the recipes and all of the nutritional information is stored, so it’s real-time.”</li> <li>• J: “our bakery, which is...in a separate location, does store nuts because they make ...things that have nuts in it for special catering events. They also make brownies and cookies and dinner rolls for the residential dining hall. So everything that’s in the residential dining hall that comes from the bakery has a, an icon—it’s a purple BK—that indicates that it came from the bakery so that students with nut allergies <i>know</i> that that is, stands as a warning—this was prepared in a facility that also handles nuts.”</li> </ul> |
|  |  | Errors in labelling      | <ul style="list-style-type: none"> <li>• E: “If someone notices something that we have marked incorrectly or that should be marked, it’s really easy and quick for us to go in and change it” (into software)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  |  | Recipe availability      | <ul style="list-style-type: none"> <li>• B: “And they can always, they can always ask for a food label or the recipe to make sure, to double check for themselves.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  |  | Menus provided           | <ul style="list-style-type: none"> <li>• C: Give you the menus prior to eating and can navigate way... we give students a lot of independence</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  |  | Across the board changes | <ul style="list-style-type: none"> <li>• G: “One of the things we’ve recently done is we do not serve any desserts in our dining centers that contain peanuts or tree nuts.”</li> <li>• J: “our main dining hall is nut friendly. It’s, there’s only one source of nut in the main</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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|  |                                     |  | <p>dining hall, and it is an individually wrapped portion cup of peanut butter.”</p> <ul style="list-style-type: none"> <li>• J: “We don’t have any big tubs of peanut butter, there’s no nuts in any of the recipes.”</li> <li>• J: “a bunch of meats on the grill and a special grill area that’s safe for them, all the deli meats are gluten free. There’s a lotta soups that are gluten free, so there’s a lot for them to pick from.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  | Special Station (for prep, service) |  | <ul style="list-style-type: none"> <li>• A: “... purple items gets sent to a different dish area, they know to take it back to the station because they have their own dish machine to clean and sanitize their items to reduce the risk of cross-contamination. No other stations are allowed to utilize that dishwasher in that station.”</li> <li>• A: [about the allergen friendly station] One of two dining halls has station; the one internal to campus “it’s available and open to the students every day during the week.”</li> <li>• A: “but then, all of our other, both reside-, both our residential dining facilities as well as all of our retail locations on campus, have the training and the ability to give students an allergen-free meal if needed.”</li> <li>• A: “They usually have a separate area in their kitchen that’s just designated for an allergen that they can go and create, or allergen in general, but that they can go and create that food item for that individual.”</li> <li>• B: “We really, a lotta that stuff has been taken away because of the station that we</li> </ul> |

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|  |  |  | <p>have for the food allergies. The students don't have to say "Hey, I have this food allergy. What kinda, what should I look for?" It's already laid out right there for them and they don't have to ask questions."</p> <ul style="list-style-type: none"> <li>• B: "we also have a platform that was developed by the company that I work for, and it's an allergen-free station. We don't serve seven of the top eight allergens. We do serve, we do serve fin fish, so students with food allergies can go to that station and it's a chef-attended station. And they can easily put together like a protein, a starch, and a vegetable at every meal, except for breakfast"</li> <li>• B: "Well, all the foods are labeled so they know exactly what's in the food. And if they would ever have a question, they would just either talk to a chef or a supervisor or whoever's workin' the line. They, they would know the answer."</li> <li>• B: 2 of three residential dining facilities have allergy station</li> <li>• G: "if the student has a food allergy and they're not comfortable with the food that's put out, each dining facility has an area that's meant just for that food."</li> <li>• G: "It doesn't always happen because a lot of the students are fine with what we're serving."</li> <li>• G: "But if they do need somethin' made special, every dining facility has a specific area that's meant just for that."</li> </ul> |
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|              |                                  |  | <ul style="list-style-type: none"> <li>• J: “we have a secure room that has a keypad access code for, it is called the allergy kitchen or the allergy pantry”</li> <li>• J: “in that kitchen there is...two, a big freezer, a fr-, a normal-size refrigerator, a counter, cabinets, preparation area, allergy-safe toasters, allergy-safe microwave, separate cabinets for the gluten-free stuff and other food allergies...”</li> <li>• J: “in the allergy pantry that I described, there’s special products there.”</li> <li>• “in the allergy pantry, I have...alternate foods.”</li> <li>• J: “So since that eliminates a lot of the brownies and the cookies and the desserts and so on, based on what the students tell me they want, I stock the allergy kitchen with Oreo cookies or the Chips Ahoy or whatever it is that is their favorite food that they feel safe with, that they know is made in a facility that doesn’t handle nuts.</li> <li>• J: “we have gluten-free breads that are readily available, brown rice, white rice that has nothing added to it, rice noodles on the stir fry station...”</li> <li>• J: “it’s accessible by any student who is in the food allergy program, so that would encompass all of the allergies or the special dietary needs that I come across.”</li> </ul> |
| Future Plans | Training                         |  | <ul style="list-style-type: none"> <li>• D: “somehow get training to all of our full-time staff as they start.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|              | Special area (for prep, service) |  | <ul style="list-style-type: none"> <li>• C: “And possibly another chef who would be in charge of an allergen-free station.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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|                         |                    |  | <p>That's another project that we're working on."</p> <ul style="list-style-type: none"> <li>• C: "this upcoming semester, we're trying to put in a, specifically a gluten-free station."</li> <li>• C: "So basically, that station is only going to be offering all gluten-free foods, and they're gonna be available for all the students, regardless of whether they need gluten-free or not."</li> <li>• C: "But we're going to try our very best to keep cross-contamination... down to a minimum."</li> </ul>                                                                                                                                                                                                              |
| Protection to operation | Liability concerns |  | <ul style="list-style-type: none"> <li>• H: "Probably one of the biggest things that we keep discussing is that we <i>don't</i> label anything as allergen free. We, we're a small management company so all of our accounts are relatively small, so...I can only think of one specifically that actually have the facilities and actually <i>does</i> provide allergen-free meals because they have the ability to create the sanitation protocols that are required to be able to do that."</li> <li>• H: "You know, ADA and, and federal laws are pretty specific about what it means to call something allergen free, so that's why we label what it contains as opposed to what it, you know, doesn't contain."</li> </ul> |
|                         | Disclaimer         |  | <ul style="list-style-type: none"> <li>• C: "we do put out disclaimers that, you know, foods do have some form of cross-contamination"</li> <li>• D: "Then we also have our disclaimer: "All information is approximate and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|                                 |                   |  | <p>intended to be used only as a guide.” [on website]</p> <ul style="list-style-type: none"> <li>• D: “... there may be changes because of the manufacturer.”</li> <li>• E: “We have like a disclaimer on our web page.”</li> <li>• E: “ultimately they’re [students] responsible for the, the food they consume.”</li> <li>• E: “We’re just saying that every efforts made to instruct our food production staff on the severity of allergies. And it comes down that the students with food allergies are encouraged to contact us”</li> <li>• H: “We do not advertise anything as allergen free, going back to that issue before where I cannot guarantee that there’s not cross-contamination in our small kitchen just because of the amount of, of things going on in the kitchen.”</li> <li>• H: “on our website we make sure that we say that any food that contains protein, you can be allergic to so that someone doesn’t just say, “Oh! I don’t have one of the eight so I guess I’m not covered.” But so, it’s, it’s eggs, it’s gluten, dairy...tree nuts, peanuts, shellfish, and soy.”</li> <li>•</li> </ul> |
| Desirable accommodation aspects | Employee training |  | <ul style="list-style-type: none"> <li>• B: “training, training, and more training...”</li> <li>• C: “I think the number one thing would probably be training because training is so, so important. “</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|  |                 |           | <ul style="list-style-type: none"> <li>• C: “not only just one training session, but multiple training sessions to reinforce the material.”</li> <li>• C: “as long as we train and re-train the staff, that’s really what’s going to help the staff understand what the patron with the food allergy needs and how to keep them safe”</li> <li>• E: “Being visual (our nutrition key that we have out there – I have like symbols that I use for everything)</li> <li>• I: “it takes a lotta training of your staff before you even start. And there’s retraining going on all the time.”</li> <li>• I: “We’ve trained you on the procedures. You have to follow the procedures and, you know, it’s that accountability and consistency. That’s a big huge thing. You have to be consistent because if you aren’t, it doesn’t make any difference if you’re making the accommodation, they won’t trust us to make the accommodation. So we have to consistently get it right.”</li> </ul> |
|  | Training topics | Knowledge | <ul style="list-style-type: none"> <li>• C: “identification of the major eight allergens,”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  |                 | Attitudes | <ul style="list-style-type: none"> <li>• C: “having the employees have an open mindset because a lot of them, they...they’re, they’re open to accommodate food allergies, but they might not necessarily see how important it is to protect the students”</li> <li>• C: “open mindset to people who have food allergies, not labeling them as, “Oh, they’re</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|  |                            |  | really picky. They need all these accommodations,” and not taking their food allergy seriously.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  | Student (patron) education |  | <ul style="list-style-type: none"> <li>• B: “...educating. Educating the students ‘cause I know next week I will be standing at that new station reminding students that they have to take a clean plate and tell them why at that station. And I think it’s just training and education is really what is key. And having the client actually back us up.”</li> <li>• B: “You have to make sure the students understand that... if they have macaroni and cheese on their plate and they go and put chicken from that particular station on their plate and touch the macaroni and cheese, now there’s soy and milk and wheat and gluten and everything that’s on that utensil. And then an ongoing student that is allergic to those things could possibly get ill. So...for the most part, they’re, they’re pretty good about it.”</li> </ul> |
|  | Staff                      |  | <ul style="list-style-type: none"> <li>• D: “I think it all starts with people who really care and want to take care of that student with the allergy.”</li> <li>• D: “being able to be, and willing and able to do something just for them if that’s what’s required.”</li> <li>• G: “You have to have everybody involved.”</li> <li>• G: “But there’s just, everybody has to have a part of it.”</li> <li>• G: “And you have to make sure that [staff] know how important it is.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |

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|  |  |  | <ul style="list-style-type: none"> <li>• G: “Everybody has to understand how important it is... It’s not, it’s not just somebody eating something that made their stomach hurt. It’s somebody who, it’s very, very dangerous.</li> <li>• J: “the people who deal with the students, to be...very...open to creative solutions and listening to the students because it’s not, it’s not OK to have a program that is rigid and just kinda say, “OK, well, this is what we do,” because there are so many variations in the way a food problem could manifest itself for a student and what’s, what’s important and what is gonna work for each individual student.”</li> <li>• J: “I see myself kind of as a mediator and a negotiator so that I’m also counseling the student because we want to, whatever accommodations we provide, we want it to be inclusive.”</li> <li>• K: “I think you have to be certainly compassionate. I think that you have to have staff willing to support, ask questions”</li> <li>• K: “I think we have to have trust that if it’s being asked, then we need to try to accommodate that. And the other thing is, even if we’re not sure if they really are truly celiacs, we need to treat it like they are. So...believing that the request is sincere.”</li> <li>• K: “I think you have to be patient with the students”</li> </ul> |
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|  |                        |                         | <ul style="list-style-type: none"> <li>• K: “The number one thing that I try to teach our staff is to not take this personally if you have someone ask you to change your gloves. It’s only because they fear getting sick, not because they don’t personally trust you.”</li> <li>• K: “I’m tryin’ to help them understand it’s <b>not</b> a personal attack. It’s environmental support for them.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                            |
|  | Administrative support |                         | <ul style="list-style-type: none"> <li>• J: “I think it’s very important to have administrative support from the top down, understanding how important it is from a responsible, ethical, legal point of view, and the Lesley ruling was very good for impressing that upon people all the way up.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|  | Communication          | With staff and students | <ul style="list-style-type: none"> <li>• D: “the communication is crucial. So what do you like that you can eat? And here’s what we have that matches that.”</li> <li>• E: “.. being honest and open with the communication with the students.”</li> <li>• E: “if somebody writes us a comment or asks us a question, we try to respond very quickly and talk to them personally.”</li> <li>• G: “And if [staff] don’t understand it, that they need to let us know. And our managers, the supervisors, are very aware of many of our students that English is a second language.”</li> <li>• G: “And if they don’t feel someone’s understanding it, they find a language barrier, then they’ll make sure that, you know, we’ll first of all explain it to you,</li> </ul> |

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|  |          |              | <p>have someone explain it to you. Or, honestly, they just don't touch food.'</p> <ul style="list-style-type: none"> <li>• H: "It's gotta be easy to understand. Gotta be consistent. And you have to communicate."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  |          | Via Policies | <ul style="list-style-type: none"> <li>• I: "You have to have it in writing. No matter which operation, how big, how small, you need to have the procedures in writing. It makes it easier for the training. It gives them something to refer back to. You need, you have to make sure that they understand that they are responsible for what they do. So, here's the procedures."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  | Discrete |              | <ul style="list-style-type: none"> <li>• F: "our institution does things in that everything is labeled, and it's really transparent, and it doesn't call attention to those with food allergies. I think <i>that</i> is a characteristic of a successful program.</li> <li>• F: "Like making your venues <i>all</i> allergen friendly, I guess, in some way or another"</li> <li>• H: "make the student feel comfortable or the guest, in general"</li> <li>• H: "Because if they feel like they're being singled out or, you know, what's wrong with me kind of, and I've dealt with that too...they're gonna be much, much less likely to ask for help, to interact with the staff, to, to be engaged"</li> <li>• H: "because...I mean, I'm blessed I don't have any food allergen, allergies but I have quite a few friends that do. It's something you have to manage in the individual, and</li> </ul> |

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|                     |                            |  | if you're uncomfortable talking to people about it, especially the people that are handling your potential opportunities for a reaction, it just is opening up the opportunity for issues."                                                                                                                                                                                                                                                                                                                                |
| Culture descriptors | Supportive                 |  | <ul style="list-style-type: none"> <li>• G: "And there's certain things that are made important, and we help each other out. We're like a baseball team, you know."</li> <li>• G: "We support each other."</li> <li>• G: "And, and if someone needs help, there's a need, you know. If someone asks me for help, I'm gonna help them, vice a versa. So it, it's about helping each other. And it's about bein', bein' solid."</li> <li>• G: "we gotta fill in the holes! We find a gap, we gotta fill that in!"</li> </ul> |
|                     | Student [customer] focused |  | <ul style="list-style-type: none"> <li>• B: "having a, a customer service culture, I mean, we have, you have to accommodate the customer"</li> <li>• B: "And the customer, to us, happens to be the student. And that seems to be like the culture. Like if you don't take care of the student, they're not gonna come back..."</li> <li>• E: "the way we interact with our university and students."</li> </ul>                                                                                                           |
|                     | Adaptable                  |  | <ul style="list-style-type: none"> <li>• A: "very open and...very adaptable to our students' needs and requests..."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                             |
|                     | Accommodating              |  | <ul style="list-style-type: none"> <li>• A: "We have the different flavors to be able to give those students that different taste of, you know, somethin' new and unique and somethin' they wouldn't necessarily pick, you know, if they were at home."</li> </ul>                                                                                                                                                                                                                                                         |

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|  | Diversity        |  | <ul style="list-style-type: none"> <li>• C: "Diversity"</li> <li>• K: "I would say instantly diversity because here in our element, we have multiple cultures. So it's not just one. It's many. So cultural, or culture, for me, means that you have diversity based on religion, ethnicity, personal preference, or just the way you were raised."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | Acceptance       |  | <ul style="list-style-type: none"> <li>• C: "Acceptance"</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | Norm/assumptions |  | <ul style="list-style-type: none"> <li>• D: "assumptions kinda people make about your community."</li> <li>• E: "I think it's your general atmosphere in the department"</li> <li>• G: "How everybody acts within and a certain, like within the foodservice department. There's certain guideline."</li> <li>• H: "culture, to me, is the belief system, the practices that you put in place and you live."</li> <li>• H: "It's not, it's not necessarily the rules or, or...or the systems. It's, it's...it's how you run the operation and how you, how you...it's how you live. I mean, it's, it's my expectations and it's consistent and...it's what we live. It's our vision."</li> <li>• I: "the...unspoken way everything runs together."</li> <li>• I: "you don't say...anything about it because it's just something everyone knows about. It's not written down that we always do this and we try to do this and we're very focused on our customers."</li> </ul> |

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|                                    |                           |               | <ul style="list-style-type: none"> <li>• I: “It’s, something that people pick up right away.”</li> <li>• I: “So I guess it’s, it’s the unspoken...policies and procedures, I guess.”</li> <li>• J: “I think it’s the values that we live by and...the care that goes into our work.”</li> </ul>                                                                                                                 |
|                                    | Don’t know                |               | <ul style="list-style-type: none"> <li>• F: “I don’t know. I don’t have a good definition for you, I guess.”</li> </ul>                                                                                                                                                                                                                                                                                         |
|                                    | Culture in flux           |               | <ul style="list-style-type: none"> <li>• H: “Transitioning to a new president, so everyone’s very worried about losing the culture ‘cause the president of our company started the company twenty-five years ago so...since he’s retiring...”</li> </ul>                                                                                                                                                        |
| Collaborate culture (departmental) | Identification of culture |               | <ul style="list-style-type: none"> <li>• H: “I would have to say the Collaborative culture.”</li> <li>• H: “as a company we are not...I have an A-type personality, so some guys struggle with this at times. We’re not as formalized and structured as a lot of our competitors.”</li> <li>• J: “our culture has...a lot of elements of each of those, but primarily...the, the Collaborative one.”</li> </ul> |
|                                    | Personal relationship     | With students | <ul style="list-style-type: none"> <li>• B: “I think the chefs get to know the students that visit that station all the time, and it becomes like, “Oh, how are you today? How was class? How was break?” And, you know, they, they talk amongst one another and they get to know each other.”</li> </ul>                                                                                                       |

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|  |                 | With coworkers      | <ul style="list-style-type: none"> <li>• B: "...and, you know, everybody's, you know, they talk amongst each other and they talk about their kids and this and that."</li> <li>• C: "Foodservice is, in our facility, is, a lot of our staff are really personable"</li> <li>• C: "A lot of our, our student employees are also very close to their direct supervisors as well."</li> <li>• C: Our staff are really personable and they do treat each other like an extended family</li> <li>• E: "as you go down more to the departmental level, I think a lot of people...it almost goes to more being outside of work being friends too."</li> </ul> |
|  | Extended family | Treated like family | <ul style="list-style-type: none"> <li>• F: "And it's just a very welcoming department, and that's just, I mean, that's really the vision of our director, to just be very...I mean, like family."</li> <li>• F: "It's just, yeah...a big family."</li> <li>• H: "And when managing our employees, we are definitely not as structured in regards to that we kinda treat them more like family and there's pros and cons to that"</li> <li>• H: "family's one of our core values. It really is. And we, we, we live that as, as part of our mantra."</li> </ul>                                                                                         |
|  |                 | Student support     | <ul style="list-style-type: none"> <li>• B: "So, I mean, I feel like that, I mean, like we're, we're basically their family. We're cooking them dinner and your mom and dad usually cook them dinner so, I mean, we're kinda like their family and make them feel like they're at home..."</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |

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|  |  |                  | <ul style="list-style-type: none"> <li>• B: “get to know the chefs so that way they kinda, like they kinda feel like family.”</li> <li>• C: “So we do treat our students as an extended family.”</li> <li>• F: “students are required to live on campus, and so we want it to feel as much like home as it can for them.</li> <li>• F: “...with the allergies, we don’t want them to feel like they are a hindrance to us.”</li> <li>• F: “we want to make it very easy, just like it would be at home for them.”</li> <li>• J: “the family aspect is really how we take care of the kids.”</li> <li>• J: “the students are extended family.”</li> <li>• J: “I’ve seen cooks hugging, with tears in their eyes, saying goodbye to a student, an allergy student who graduated because they’ve cooked their special meals for them for the past four years, and they feel like they’re losing one of their kids when the kid graduates.”</li> </ul> |
|  |  | Coworker support | <ul style="list-style-type: none"> <li>• A: “we’re always workin’ towards that goal of, you know, makin’ sure that, since we spend so much more time here at work with these individuals, we’re, we’re more like that extended family where, you know, we tell everybody good mornin’ and hugs and bringin’ coffee to each other”</li> <li>• B: “Everybody pretty much has everybody’s back... if something needs to get done or if somebody’s on break and a student wants...pasta station that we do to</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|  |  |  | <p>order, you know, somebody else will jump in and help out. It just seems like, you know, everybody helps everybody out ...”</p> <ul style="list-style-type: none"> <li>• C: “, and they do treat each other like an extended family...”</li> <li>• D: “Well, we had one of our student staff members at one of our locations that died. ...people went to the remembrance ceremony, people went to the funeral. It’s a pretty close-knit group.”</li> <li>• D: “Even if you end up with a group of seventy, and some of ours have a couple hundred, but... they work together and it’s, they get to know each other pretty well.”</li> <li>• D: “I hear people say, “This, this is like my second family...”</li> <li>• E: “A lot of people refer to it as feeling like a family being here.”</li> <li>• E: “they come in and they enjoy being here”</li> <li>• E: “they have contact outside of work too”</li> <li>• G: “we act like we’re a team, we’re family. The management team, we’re like brothers and sisters, and we’re very close but we’re also very willing to help each other out. And we also tell our supervisors as, as kind of educating them, you know, “This is how we do things.”</li> <li>• H: “We take care of our employees because we know if we take care of them, they’re gonna take care of us.”</li> <li>• H: “Having a smaller staff of only thirty-five, thirty-two full-time employees, I have</li> </ul> |
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|  |                  |                 | <p>the opportunity to get to know them all very well.”</p> <ul style="list-style-type: none"> <li>• H: “if an employee needs to miss work to take care of a family member or they’re sick or whatever themselves, we all work together to try and take care of them, make sure that they get the time off, cover their shifts”</li> <li>• I: “Cause we, we do still stress your private life is your private life, and don’t bring that to work. But they still make like a family thing <i>at</i> work.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                  |
|  | Nurturing/caring | Peer (employee) | <ul style="list-style-type: none"> <li>• A: “Well, throughout not only our residential dining, but our retail, we, I mean, constantly our, our employees get shifted around and, you know, our management staff gets moved around so, you know, things are different and people get a different feel for different areas and different experiences and...being able to do that, it’s very...nurturing and there’s a lot of mentoring going on”</li> <li>• D: “Anytime we can help people develop and grow... in their professional lives, that’s our emphasis.”</li> <li>• F: “we’re not a huge department. I think everybody just really cares for everyone. And we all recognize that we’re working towards the same goal.”</li> <li>• H: “We all share what’s going on in our lives, and...we take care of each other.”</li> <li>• H: “I had an employee that just threw his back out and...corporate policy is that he</li> </ul> |

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|  |           |          | <p>should go on medical leave until he's cleared of all restrictions unless there's any positions open. The checker, who does not like working in the kitchen—actually she's amazing in the kitchen, but she doesn't like it volunteered to work his shift in the kitchen and let him work the checker stand where he, where it fit within those accommodations, so he didn't lose out on any pay, he was able to work.”</p> <ul style="list-style-type: none"> <li>• H: “The company [laugh] was very happy because we were able to take care of each other.”</li> </ul>                        |
|  |           | Students | <ul style="list-style-type: none"> <li>• A: “not only with our staff, but with our students that are on campus. It's very...nurturing and loving and caring”</li> <li>• D: “Part of our goal of our, our mission: Nourishing the [school name] Spirit through good food—happy people—comfortable places.”</li> <li>• D: Anytime we can help people develop and grow in their academics... that's our emphasis.”</li> <li>• G: “And so everybody really takes it, our managers become like second parents to these students at the dining centers. And they're very important to them.</li> </ul> |
|  | Mentoring |          | <ul style="list-style-type: none"> <li>• A: “we love our chefs to, you know, mold and mentor those under them, make sure that they can grow in their individual...ways.”</li> <li>• A: Personal experience:” I actually worked my way up from working in one of our</li> </ul>                                                                                                                                                                                                                                                                                                                   |

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|  |               |                  | <p>retail locations as a student all the way through graduation, after graduation, and then now, I'm in this full-time role."</p> <ul style="list-style-type: none"> <li>• G: "Also cooks. We have a, if you have a dishwasher who wants to be a cook, you know, we love that!"</li> <li>• G: "Well, let's, let's train you. Let's train you, let's maybe have you cook."</li> <li>• G: "we're all very concerned about how people feel."</li> </ul>                                                                                                                                                                                                                                                    |
|  | Relationships | Name recognition | <ul style="list-style-type: none"> <li>• A: "when anyone in our department sees someone that has been in our facilities, we know them by name"</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  |               | Celebrate peers  | <ul style="list-style-type: none"> <li>• A: "several of them [employees] have been pregnant in the last year and, you know, we're always havin' get-togethers here at work and, you know, outside of work to celebrate things like that and each other's accomplishments"</li> <li>• D: "if there's a baby born and there's a baby shower or...recognition ceremonies for anniversaries, work anniversaries."</li> <li>• I: "whenever...something is going on with, with people, you know, it's like, oh, so-and-so's gettin' married. And everybody's like, "Oh, we should do something for them!" You know, like you do in your family. Instead of like, "Oh, that's good." Good to know!"</li> </ul> |
|  |               | Work gathering   | <ul style="list-style-type: none"> <li>• A: "several of them [employees] have been pregnant in the last year and, you know, we're always havin' get-togethers here at work and, you know, outside of work to</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|  |                        |  | <p>celebrate things like that and each other's accomplishments."</p> <ul style="list-style-type: none"> <li>• G: "we have dinner together sometimes to talk about work."</li> <li>• G: "have lunch together"</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | Collaboration/teamwork |  | <ul style="list-style-type: none"> <li>• F: "like with food allergies, we all just work together to make sure we can accommodate."</li> <li>• G: "we definitely would go out there and give it our all, and really support each other"</li> <li>• G: "But we're definitely like a baseball team."</li> <li>• G: "whenever there's a time where all hands are on deck"</li> <li>• G: "there's people that have helped <i>me</i> when I've been so busy 'cause something came down from our chancellor and gotta get done. You know, let me get a, a supervisor, an assistant director coming in, saying "Hey, let me help you do this. Tell me what I need to do." So, it's, we all want each other to succeed."</li> <li>• H: "we support each other, not just at our location, but at all of our locations—lending employees back and forth. We don't have as much corporate structure, so we're very dependent on each other to help solve our problems."</li> <li>• H: "the ADA officer, she is a people person. She is a, of the collaborative culture, so very supportive there."</li> </ul> |

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|  |                   |  | <ul style="list-style-type: none"> <li>• I: “we have a big event going on in your operation and...you know, you’re, you may be startin’ to feel a little stressed ‘cause you’re kinda wonderin’ if you’re gonna make it, but the other managers will ask you if you need help with anything. Do they need to come in? Do you need them to look for some extra, some students who might want some extra hours? That sorta thing. Now if you have something, you know, like you have someone who’s really good at making...centerpieces, then, you know, you maybe offer to have that person do that for ‘em to take the, help them de-stress a little bit.”</li> <li>• J: “we have leaders that embody each one of those cultures and bring them to the table... it depends on what the situation is who’s going to take the lead on a certain, you know, aspect of our work”</li> </ul> |
|  | Fun place to work |  | <ul style="list-style-type: none"> <li>• A: “fun place to work”</li> <li>• G: “have lunch together and we, we were, you know, in meetings and we’re always laughing and joking, but we still get the job done.”</li> <li>• J: “we knew the snowstorm was coming—and this is not, this is not isolated; this is how we handle emergency situations—because we know that the, ninety percent of our students live on campus and they have to be fed even if there is an emergency, our building has its own generator. We rent cots and bring in cots, and staff come in</li> </ul>                                                                                                                                                                                                                                                                                                       |

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|                               |                           |  | <p>with their sleeping bags and their overnight bag, and they spend the night in the building so that they can, they know that they're there in the morning to feed the students. And it's actually kind of like a fun thing that people really like to do!"</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Create culture (departmental) | Identification of culture |  | <ul style="list-style-type: none"> <li>• E: "...find new things and keep up on new trends."</li> <li>• E: "we, we have a really creative cooking team... they all kind of play off of each other so I think they come up with a lot of new ideas and implement them throughout the year."</li> <li>• E: Example: "they're trying to come up with new items for spring. So the, one of our sous chefs and one of our line cook were working together and trying to make a new sandwich. And they kept bringing different versions in for the director to taste"</li> <li>• F: "both my department and the institution as a whole, somewhere between the Collaborate and then the Create"</li> </ul> |
|                               | Innovative                |  | <ul style="list-style-type: none"> <li>• F: "So, speaking first for the department, we've got a really, well, an award-winning farm-to-college program.... And that's really forward thinking"</li> <li>• J: "The creative thing is important for us to get our, we do a lot of contests and competitions and events to keep our, our image up and the morale up and to keep the kids engaged with us."</li> </ul>                                                                                                                                                                                                                                                                                 |

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|                                | Willing to take risks |                       | <ul style="list-style-type: none"> <li>F: “And so that’s a huge risk. It affects our bottom line, but it really improves guest satisfaction”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Control culture (departmental) | Oversight             | Policies & procedures | <ul style="list-style-type: none"> <li>C: “our facility is run by policies and procedures”</li> <li>C: “our facility is tightly controlled by the university, so a lot of our policies and procedures come from them in our...we have to get approval about everything that we do through the university.”</li> <li>I: “I think that falls in when it comes to the money side of it because we’re very much the, like the WOR forms have to be done this way, and they have to be done then, at this time. And...there are some other different things like that. It just happens this form must be filled out in this amount of time.”</li> <li>I: “If <i>this</i> happens, then <i>this</i> form must be filled out in this amount of time. You must do, we have a lot of, we have...not a lot, but we have some must-do’s that there’s no give on.”</li> <li>I: “generally havin’ to do in, anything to do with money, of course, which is a good thing.”</li> <li>I: “When it comes to the staff. When it co-, it’s about injury and holidays and, I guess, leave time. I shouldn’t say holidays, say leave time. And advancement. So we have some very rigid set of rules for, for those things.”</li> </ul> |

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|                                |                           |  | <ul style="list-style-type: none"> <li>• I: “Day-to-day, as I said, every day a WOR has to be filled out. It is a financial form, and you put in your labor, you put in your amount of money you made. You have your inventory, and it’s for figuring out how much, how much money you made an hour.</li> <li>• K: “I believe that it would be between one and two—between Cultur-, Control and Compete.”</li> <li>• K: “So, you know, we do have to have that structure that would...kinda have like some of the Control culture.”</li> </ul>                                              |
|                                | Stability                 |  | <ul style="list-style-type: none"> <li>• C: “...we don’t take many risks. We try to tend, we tend to stay on the conservative safe side”</li> <li>• J: “the control is very important for, you know, feeding thousands of people and keeping our, you know, our costs in line.”</li> </ul>                                                                                                                                                                                                                                                                                                  |
| Compete culture (departmental) | Identification of culture |  | <ul style="list-style-type: none"> <li>• K: “ I feel like Compete would be the more accurate culture.”</li> <li>• K: “Well, our framework is basically designed on supply and demand and a short time.”</li> <li>• K: “our goal is to get in, do it, do it well, of course...actually, you know, we have to achieve a goal within that short amount of time because three months is not a long time to get in, serve thirty thousand students a day, and get out”</li> <li>• K: “competition and achieving our goals at a fast pace would be certainly a highlight from Compete”</li> </ul> |



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|                                 | Competition |  | <ul style="list-style-type: none"> <li>• K: “each different facility maybe has something special to offer, so therefore it, it kind of creates that competitive spirit.”</li> <li>• K: “For example, we recently had a chili cook-off and different facilities entered, coming together and trying to show which team makes the best chili across campus. So, that would certainly kinda drive home the idea of competition, and certainly achievers too because they’re proud of what they do, they wanna be the best.”</li> <li>• K: “And of course, anybody would want to win a trophy at this event as well. It’s a, it’s a trophy that’s passed between different facilities, once ownership has been claimed. So that’s kind of a side note as far as competition.”</li> <li>• K: “But different facilities have higher numbers of students that they feed so that kinda creates that competition as well. The more students, the larger the facility, the more staffing they need and, and require so...that would definitely be another example.”</li> </ul> |
| Unknown culture (institutional) |             |  | <ul style="list-style-type: none"> <li>• G: We have a new chancellor, so there’s a lot of changes coming</li> <li>• J: “honestly, having been there only for three and a half years, I’m not sure that I can really characterize the culture.</li> <li>• J: It’s a very old, well-established, traditional school, and I think there’s, there’s, I’ve become familiar with smaller</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|                                        |                           |  | departments and subcultures, but I, I don't really know that I can characterize the...the big picture...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Compete culture<br>(institutional)     |                           |  | <ul style="list-style-type: none"> <li>• H: "The institution is much more of a competitive culture"</li> <li>• H: "I report up to the Finance.... I'm not saying he's not concerned about the individuals in regards to allergens and stuff like that, but it's about having the impetus of the ADA compliance behind it, it woulda been a much harder sell to invest the time because it was a ton of time to build the program, which equals labor which equals money."</li> <li>• H: "But the institution, as a whole, are definitely, my goal is set for the year was simply as, "you'd better make as much money as you did last year."</li> <li>• H: "And then I have the finance side. This is a business. We need to run it like a business, so...I find support where I need it. But as far as selling it to my ultimate boss, Finance, the ADA definitely made it easier."</li> </ul> |
| Collaborate culture<br>(institutional) | Identification of culture |  | <ul style="list-style-type: none"> <li>• E: "I think Collaborate is one of the big cultural descriptions of [institution acronym] too."</li> <li>• E: "with the university being such a small university ... A lot of people refer to it as feeling like a family being here"</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|  |                                |  | <ul style="list-style-type: none"> <li>• F: “both my department and the institution as a whole, somewhere between the Collaborate and then the Create,”</li> <li>• I: “he actually knows you’re name, you’re surprised and just like, “Oh, wow!”</li> <li>• I: “Well, one of the things that...for the institution, they, they, we really want our residents to do their best, to graduate on time...and achieve everything that they can. So...part of the way of doing that is by assisting them in not missing any time. So that means you wanna help them not be sick, not be off center, that sorta thing. And that’s how the food allergy policy comes into the excellence program so, that we do”</li> </ul> |
|  | Family tradition               |  | <ul style="list-style-type: none"> <li>• B: “I know a lot of students that go to this college have family members that have went to the college and they’re alumni and...</li> <li>• B: “...you know, everybody’s like a big family there.”</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|  | Social gathering/social aspect |  | <ul style="list-style-type: none"> <li>• B: “I mean, I just see them going back from, working from a family weekend, it’s just, there are just so many people out there, you know, that know, knows everybody else and all the departments get together</li> <li>• I: “But then the university also does things, like we get birthday cards from our vice president, Christmas cards from our vice president. He comes through the area and he knows a lotta the people, and</li> </ul>                                                                                                                                                                                                                             |

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|                                 |               |  | <p>there's...OK, just in the foodservice part, there's like five hundred people."</p> <ul style="list-style-type: none"> <li>• I: "And, you know, we could do a...different get-togethers to get people together and it's on campus, mingling kind of thing, to get to know each other."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                 | Work together |  | <ul style="list-style-type: none"> <li>• E: "we just had a new president two years ago... it's been kind of a really nice example that [people] of different departments getting to know each other and working together.</li> <li>• E: "And we've done some restructuring, we moved from one department to another."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Control culture (institutional) | Oversight     |  | <ul style="list-style-type: none"> <li>• A: "when we grow, we make sure that all of the t's are crossed and the i's are dotted."</li> <li>• C: our facility is tightly controlled by the university, so a lot of our policies and procedures come from them"</li> <li>• C: "get approval about everything that we do through the university."</li> <li>• I: "'Cause a lot of what we have that's very... [strict and ritualized is, are things that the university requires. And I understand why, and everybody understands why they're required to be that way because, you know, the government wants it that way or it's the only way you can keep track of, of this particular thing and make sure that all the bases are covered and, so they understand it's, it's a</li> </ul> |

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|  |                  |  | <p>protection kind of thing that happens at the university's"</p> <ul style="list-style-type: none"> <li>• K: Very formal. Policy driven</li> <li>• K: There's very much a hierarchy system here within our facility. And even within foodservice as well, but you know, each dining location has its own little hierarchy within it as well too. You know, there has to be upper-level management and cascade down to implementation.</li> </ul>                                                                                      |
|  | Communication    |  | <ul style="list-style-type: none"> <li>• A: "...and there's constant communication throughout, whether it's emails or conferences or conference calls to make sure that everybody's on the same page."</li> </ul>                                                                                                                                                                                                                                                                                                                      |
|  | Stability        |  | <ul style="list-style-type: none"> <li>• A: "We don't like a lot of ripples because it tends to throw out students then, you know, we don't wanna affect them in any kind of a negative way or, you know, have any kind of issues as far as throwin' off their studies 'cause they are here to learn first and foremost."</li> <li>• A: "But that stability that we can give the students of, you know, this is happening then with, whether it's events or graduation or athletic, you know, events and things like that."</li> </ul> |
|  | Student-centered |  | <ul style="list-style-type: none"> <li>• A: "they take into account and they always, you know, make sure that the students, number one, are the ones that we're working towards making them happy and makin' sure that their experience here is a positive one."</li> </ul>                                                                                                                                                                                                                                                            |

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| Interplay between culture and accommodations | Control (institutional) culture helps |  | <ul style="list-style-type: none"> <li>• A: “Like as the university, the coordination between departments... to insure that this, we’re aware of the student and their concerns or their problems.”</li> <li>• C: Even though we do have that control aspect and we have to stick to P &amp; P given to us by the university, .... We really do try our best ... understand the student and at his/her level and try to give them accommodations... treat our students as an extended family</li> <li>• K: “I think with the culture being formal and precise and falling back on policies”</li> <li>• K: “I think that it gives us a strict direction on how to handle it. It gives us a very formal way of when we need to have that policy in place, like that student information form that we first fill out, and then we meet with the student as a group. And then we meet with the student as an individual, so it’s very much that formal hierarchy policy system that we have in place, much like the overall facility. So I think we, we certainly mirror that as professionals.”</li> </ul> |
|                                              | Collaborative (departmental)          |  | <ul style="list-style-type: none"> <li>• A: “And then the fact that we, as a department, function more than the family, we bring these students in..., kinda tell them our story... I tell them from a personal point of view, I have food allergies. My son had food allergies And so, a lotta the things that we utilize, we do</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|  |  |  | <p>in our allergen-friendly station, I've developed in my own home to make sure that those accommodations are met that, you know, my son and I are safe when we eat. And so, I try and follow through that when the students come to see us, because this is often their first time away from their parents and they're trying to learn how to function as adults and be able to advocate for themselves. And that's the big thing is, I'm here to help them in any way, shape, or form that I <b>can</b> to make sure that their voice is heard and that they're understood."</p> <ul style="list-style-type: none"> <li>• B: "Yes, the culture of our food service department influences the way food allergies are handled. Because we have an allergen free station and because our chefs are trained in food allergies and cross contamination, they know the struggles the student endures daily and can sympathize with them. We are in the customer service business too. If our customers (students) are not happy, they are going to take their money and go elsewhere off campus and may not sign up for another meal plan the following year. That means loss of money for us."</li> <li>• D: "I think for us, we <b>want</b> to take care of that student. We <b>want</b> to nurture them. We <b>want</b> them to personally succeed."</li> </ul> |
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|  |  |  | <ul style="list-style-type: none"> <li>• D: “We want them to have a pleasant experience and satisfactory experience while they’re here at, at [Institution Name] It’s that caring about the individual.</li> <li>• E: “I think it does” (culture impacts food allergies handling)</li> <li>• E: “it kind of trickles down to the students because...I, I think because of that kind of family closeness, it makes them more comfortable to come in and actually have a personal conversation about their allergies, being such a personal thing to them.”</li> <li>• G: “We want to get the job done and right. We want all our students to be safe. “</li> <li>• “We’re all parents. We all have kids who are college students, who have been college students, or will be soon”</li> <li>• G: “When we see our students, we act like, you know, that’s somebody’s child”</li> <li>• G: “Every single one of us...who are alums of this school, know how important it is to put the food out there. Make sure it’s good, looks good but safe”</li> <li>• H: “, I mean, it’s right in the messaging that we use. I typically start out the training by asking, “Does anyone here have a family member or friend that has a food allergy? Or do you have a food allergy?” By making that personal connection, ‘cause we encourage that, you know, beyond the allergen program, I <i>want</i> my</li> </ul> |
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|  |  |  | <p>staff to know the students by name and the customers by name and, you know, I, I'm a big advocate for, you know, greeting everybody and telling 'em "Have a good day." And so, by tying that into the allergen program, you see it more like you're taking care of somebody instead of an added chore of, "Ohhh, I gotta [laugh], I gotta make sure on these labels and I can't, I can't change the recipe the way I want to." You know, you're doing it because you're, you're taking care of somebody. They're counting on you."</p> <ul style="list-style-type: none"> <li>• H: "it helps sell it and, and get the commitment"</li> <li>• I: "once they get to <i>know</i> a person, they'll start looking for them. It's like, they come in, say they, the person comes in at...noon on Monday, Wednesdays, and Fridays. They'll kinda keep an eye out for them...just in case they need some help with something. It's not, they actively go up to the person and say, "Hey, do you need help today? Because they do have the different things that help them navigate through the food. But, they <i>kind</i> of stay around in case some person has questions that day. And then...they'll help them out. Like if, you know, they, they have the same sheets that the students have, so...they're like, "Well, don't you, just </li></ul> |
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|  |                         |  | <p>remember, you know, if they get the burger, just remember you can't have those chips 'cause they're fried."</p> <ul style="list-style-type: none"> <li>• K: <i>Though not identified culture of site K</i><br/>"I would think that the personnel culture would have to be supportive, much like a collaborative culture, you know, within the facility."</li> <li>• K: "They are gonna work together as a team, as a family, as a unit. So they can collaborate with each other when it comes to food allergies. If one of the staff members is familiar and comfortable with dealing with allergies, then it makes it easier on some of the other staff members to learn from them. They're typically willing to teach and educate and share with them ideas that they actually use or maybe a direction that they took with an allergy student that worked well, so they can collaborate on that and find out what's gonna work best for the student based on past experiences or comfort levels."</li> <li>•</li> </ul> |
|  | Compete (institutional) |  | <ul style="list-style-type: none"> <li>• H: "You know, Student Services side. And then I have the finance side. This is a business. We need to run it like a business, so...I find support where I need it. But as far as selling it to my ultimate boss, Finance, the ADA definitely made it easier."</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|  | Collaborate (institutional) |  | <ul style="list-style-type: none"> <li>• E: “One of the big pushes of the university is diversity and being accepting of people.”</li> <li>• E: “.that moves its way into allergies too because it could be a stigma too if you have an allergy, and we want everybody to feel welcome here.</li> <li>• E: “I think the university helps...people feel more comfortable if they have something that’s gonna make them stand out like that.”</li> </ul>                                                                                                                     |
|  | Create (departmental)       |  | <ul style="list-style-type: none"> <li>• E: “And then with our kind of Create thing, we, we react so quickly to any new ideas or suggestions that people have.”</li> <li>• F: “because we’re forward thinking, I think we’re more accepting of the fact that food allergies are a growing concern. I mean, like there are consistently more and more diagnosed cases of them...”</li> </ul>                                                                                                                                                                                |
|  | Other                       |  | <ul style="list-style-type: none"> <li>• K: “And when you come together as a group, it makes you a little bit more stable, stronger, more confident, you know. Our, our staff is scared that they’re gonna make someone sick and, and the element of fear is good, to make sure that we’re, we’re going above and beyond what we need to do. But we do not want the fear to keep us from being able to help them. So, it’s tryin’ to find a fine line there if...we wanna stay a little worried about it, but we don’t want it to cripple us at the same time.”</li> </ul> |